SPS-5 CONSTRUCTION REPORT
SHRP Western Region

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

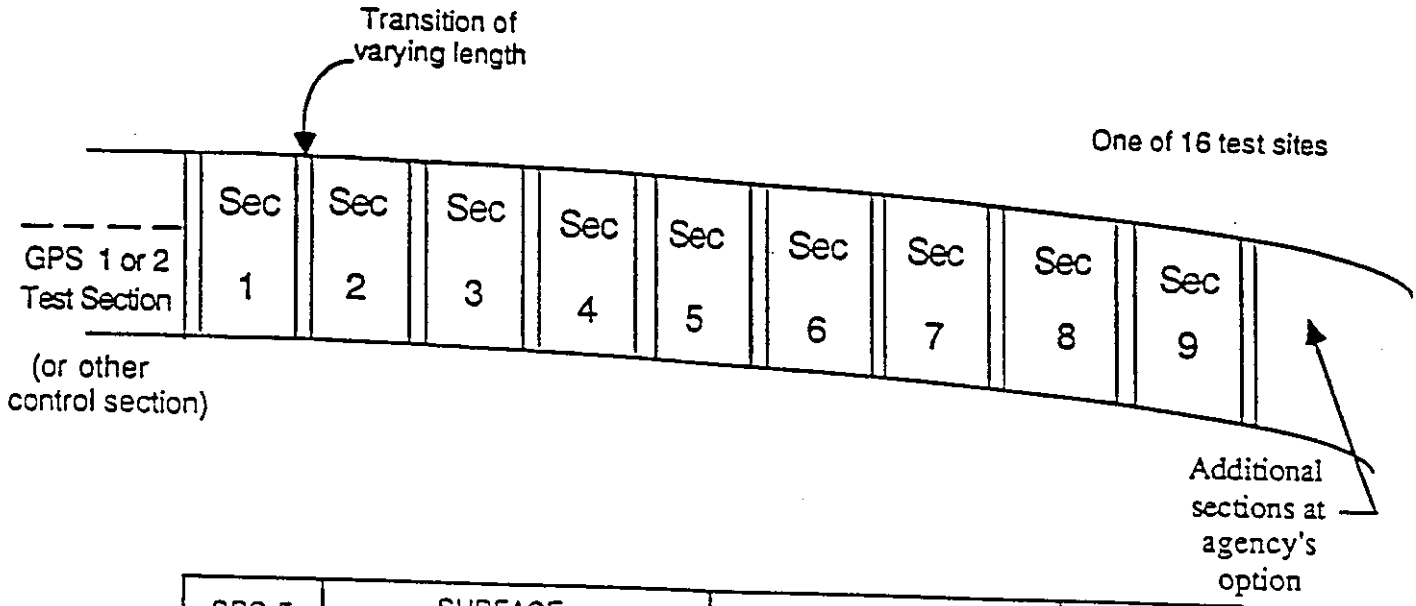
SPS-5 Construction Report
SHRP Section 300500
Big Timber, Montana
September 6-12, 1991

INTRODUCTION

A SHRP (Strategic Highway Research Program) SPS-5 (Specific Pavement Study) experimental section was constructed on Interstate 90 near Big Timber, Montana, September 6 through 12, 1991. The SPS-5 experiment addresses the rehabilitation of asphalt concrete pavements. Each experiment requires the construction of multiple test sections with similar details and materials at each of 16 sites equally distributed in the four climatic regions. This report discusses the construction of one site which is located in Montana.

SPS-5 GENERAL CRITERIA

The SPS-5 experiment was developed to investigate the performance of selected asphalt concrete (AC) rehabilitation treatment factors. A standard SPS-5 experiment consists of nine 500-foot test sections. These sections include a control section and eight experimental sections, as shown in Figure 1. The eight experimental sections are constructed using differing surface preparations, differing overlay thicknesses and differing overlay materials. Four sections are constructed on a minimally prepared surface and four on an intensively prepared surface. On



SPS-5 SECTION	SURFACE PREPARATION	OVERLAY MATERIAL	OVERLAY THICKNESS
1	Routine Maintenance	Control Section	0
2	Minimum	Recycled AC	2-inch
3	Minimum	Recycled AC	5-inch
4	Minimum	Virgin AC	5-inch
5	Minimum	Virgin AC	2-inch
6	Intensive	Virgin AC	2-inch
7	Intensive	Virgin AC	5-inch
8	Intensive	Recyded AC	5-inch
9	Intensive	Recyded AC	2-inch

Figure 1. Illustrative test section layout for SPS-5, rehabilitation of ashpalt concrete pavements.

each type of surface preparation both recycled (RAP) and virgin asphalt concrete mixtures are placed at both 2 inches and 5 inches. Therefore, the experiment consists of:

- Section 1 - Control, routine maintenance.
- Section 2 - 2 inch RAP overlay with minimal surface preparation.
- Section 3 - 5 inch RAP overlay with minimal surface preparation.
- Section 4 - 5 inch virgin overlay with minimal surface preparation.
- Section 5 - 2 inch virgin overlay with minimal surface preparation.
- Section 6 - 2 inch virgin overlay with intensive surface preparation.
- Section 7 - 5 inch virgin overlay with intensive surface preparation.
- Section 8 - 5 inch RAP overlay with intensive surface preparation.
- Section 9 - 2 inch RAP overlay with intensive surface preparation.

The states were encouraged to add any additional test sections they wished to study and SHRP agreed to monitor them just as they monitor the SHRP SPS-5 sections.

The control section is designed to indicate the rate of change that could be expected for the test sections had they not been rehabilitated. Other requirements are the recycled mixture contain 30% RAP (recycled asphalt pavement) and the milled material on the intensive preparation sections be replaced with the same material as is used for the overlay on that section.

SPS-5 MONITORING REQUIREMENTS

PRECONSTRUCTION: Monitoring of the SPS-5 site consists of a distress survey, either manual or automated surveys completed every other year, profile data collection using a high speed profilometer completed every year, non-destructive testing using a Falling Weight Deflectometer (FWD) every five years, and coring and soil samples before construction. The distress survey is currently contracted out to and completed by PASCO (Photographic Aerial Survey Co.). PASCO creates a film of the distress throughout the section and prints a transverse profile every 50 feet. The distress survey may also be completed manually by mapping individual distress for each section. All cracking and other forms of distress are noted on a 1-foot by 1-foot scale. The high speed profilometer produces a longitudinal profile of the travel lane for each section at 6-inch increments. The FWD drops a series of varying weights for a set pattern at 25 foot intervals to measure the deflection of the pavement. Coring and soil samples include extracting 4-inch, 6-inch, and 12-inch diameter pavement cores, six-inch auger probes, 12-inch bore holes, and a 6-foot by 4-foot test pit to a depth of 12 inches below the top of the untreated subgrade. Samples are either tested within the state or contracted out. Refer to Figure 2 for a table of preconstruction sampling requirements. Refer to Figure 3 for a table of preconstruction testing requirements.

POST CONSTRUCTION: Post construction monitoring of the SPS-5 site consists of a distress survey, profile data collection using a high speed profilometer, Falling Weight Deflectometer, and 4 inch core samples. The testing plan for the overlay is shown in figure 4. Sampling of

the overlay is completed no later than six months after construction. Core samples are taken outside the 500 foot test section, see Figure 5.

Program Scope for Field Material Sampling and Field Testing for the SPS-5 Experiment.

MATERIAL AND SAMPLE DESCRIPTION	NUMBER OF MATERIAL SAMPLES	SAMPLE TYPE DESIGNATION
PRE-CONSTRUCTION SAMPLING		
1. Asphalt Concrete (original layer)		
Coring - 4" diam. cores	26	C1-C26
Coring - 6" diam. cores	3	A1-A3
Coring - 12" diam. cores	6	BA1-BA6
Bulk Sampling (12" by 12" slab)	2	TP1
2. Unbound Base/Subbase Layers (per layer)		
Augering 6" diam. holes	3	A1-A3
Bulk sampling in 12" diam. holes	6	BA1-BA6
Bulk sampling in test pit	1	TP1
In situ density and moisture content (nuclear gauge)	1	TP1
Moisture content samples	8	TP1,BA1-BA6
3. Bound Base/Subbase Layers (per layer)		
Coring - 4" diam. cores	6	C4,C5,C15,C16,C23,C24
Coring - 6" diam. cores	3	A1-A3
Coring - 12" diam. cores	6	BA1-BA6
4. Subgrade		
Splitspoon sampling	6*	A1-A3
Thin-walled tube sampling (* 2 tubes or 2 spoons or combination per hole)	6*	A1-A3
Bulk sampling in 12" diam. holes	6	BA1-BA6
Bulk sampling in test pit	1	TP1
In situ density and moisture content (nuclear gauge)	1	TP1
Moisture content samples	8	BA1-BA6,TP1
5. Shoulder Auger Probes	3	S1-S3
POST - CONSTRUCTION SAMPLING		
1. Asphaltic Concrete (overlay)		
Coring - 4" diam. cores	40	C27-C66

Figure 2

SPS-5 Laboratory Testing Plans (Pre-Construction)

Material Type and Properties	SHRP Test Designation	SHRP Protocol	No. of Tests per Layer	Material Source/ Sample Type Designation
PRE-CONSTRUCTION				
I. ASPHALT CONCRETE				
A. ASPHALTIC CONCRETE:				
Core Examination/Thickness	AC01	P01	26	ALL C-TYPE CORES
Bulk Specific Gravity	AC02	P02	9	[C3 C4 C5], [C13 C14 C15], [C22 C23 C24] (see note 3)
Maximum Specific Gravity	AC03	P03	3	[BA1-3], [TP], [BA4-6]
Asphalt Content (Extraction)	AC04	P04	3	[BA1-3], [TP], [BA4-6]
Creep Compliance	AC06	P06	3	C2, C9, C20 (see note 1)
Resilient Modulus	AC07	P07	6	[C4 C5], [C14 C15], [C23 C24]
Tensile Strength	AC07	P07	9	[C3 C4 C5], [C13 C14 C15], [C22 C23 C24]
Field Moisture Damage	AC08	P08	3	A1, A2, A3
B. EXTRACTED AGGREGATE:				
Type and Classification:				
Coarse Aggregate	AG03	P13	3	[BA1-3] [TP] [BA4-6]
Fine Aggregate	AG03	P13	3	[BA1-3] [TP] [BA4-6]
Gradation of Aggregate	AG04	P14	3	[BA1-3] [TP] [BA4-6]
NAA Test for Fine Aggregate Particle Shape	AG05	P14A (note 2)	3	[BA1-3] [TP] [BA4-6]
C. ASPHALT CEMENT:				
Abson Recovery	AE01	P21	3	[BA1-3] [TP] [BA4-6]
Penetration at 77 and 115° F	AE02	P22	3	[BA1-3] [TP] [BA4-6]
Specific Gravity (60F)	AE03	P23	3	[BA1-3] [TP] [BA4-6]
Viscosity at 77F	AE04	P24	3	[BA1-3] [TP] [BA4-6]
Viscosity at 140F,275F	AE05	P25	3	[BA1-3] [TP] [BA4-6]

NOTES:
1. Creep compliance will be performed when suitable procedures are developed -- cores will be stored.
2. National Aggregate Association will perform tests at no cost to the State.
3. Cores within brackets are from the same sampling area.

Figure 3

SPS-5 Laboratory Testing Plans (Pre-Construction) continued.

Material Type and Properties	SHRP Test Designation	SHRP Protocol	No. of Tests per Layer	Material Source/ Sample Type Designation
II. BOUND (TREATED) BASE AND SUBBASE				
Type and Classification of Material and Treatment	TB01	P31	3	[C4 C5] [C15 C16] [C23 C24]
Pozzolanic/Cementitious: Compressive Strength	TB02	P32	3	[C4 C5] [C15 C16] [C23 C24]
Asphalt treated: Dynamic Modulus (77F)	TB03	P33	3	[C4 C5] [C15 C16] [C23 C24]
HMAC: Resilient Modulus	AC07	P07	3	[C4 C5] [C15 C16] [C23 C24]
III. UNBOUND GRANULAR BASE AND SUBBASE				
Particle Size Analysis	UG01	P41	3	[BA1-3] [TP] [BA4-6]
Sieve Analysis (washed)	UG02	P41	3	[BA1-3] [TP] [BA4-6]
Atterberg Limits	UG04	P43	3	[BA1-3] [TP] [BA4-6]
Moisture-Density Relations	UG05	P44	3	[BA1-3] [TP] [BA4-6]
Resilient Modulus	UG07	P46	3	[BA1-3] [TP] [BA4-6]
Classification	UG08	P47	3	[BA1-3] [TP] [BA4-6]
Permeability	UG09	P48	3	[BA1-3] [TP] [BA4-6]
Natural Moisture Content	UG10	P49	3	[BA1-3] [TP] [BA4-6]
IV. SUBGRADE				
Sieve Analysis	SS01	P51	3	[BA1-3] [TP] [BA4-6]
Hydrometer to 0.001mm	SS02	P42	3	[BA1-3] [TP] [BA4-6]
Atterberg Limits	SS03	P43	3	[BA1-3] [TP] [BA4-6]
Classification	SS04	P52	3	[BA1-3] [TP] [BA4-6]
Moisture-Density Relations	SS05	P55	3	[BA1-3] [TP] [BA4-6]
Resilient Modulus	SS07	P46	3	A1 A2 A3 or [BA1-3] [TP] [BA4-6]
Unit Weight	SS08	P56	3	[BA1-3] [TP] [BA4-6]
Natural Moisture Content	SS09	P49	3	[BA1-3] [TP] [BA4-6]
Depth to Rigid Layer			3	S1 S2 S3

Figure 3

SPS-5 Laboratory Testing Plans (Post-Construction)

Material Type and Properties	SHRP Test Designation	SHRP Protocol	No. of Tests per Layer	Material Source/ Sample Type Designation
A. ASPHALTIC CONCRETE:				
Core Examination/Thickness	AC01	P01	40	ALL CORES
Bulk Specific Gravity	AC02	P02	40	ALL CORES
Maximum Specific Gravity	AC03	P03	6	BV1, BV2, BV3, BR1, BR2, BR3
Asphalt Content (Extraction)	AC04	P04	6	BV1, BV2, BV3, BR1, BR2, BR3
Moisture Susceptibility	AC05	P05	6	BV1, BV2, BV3, BR1, BR2, BR3
Creep Compliance	AC06	P06	2	[C51 C52 C53], [C57 C58 C59] (see note 1)
Resilient Modulus	AC07	P07	6	[C32 C33] [C35 C36] [C38 C39] [C41 C42] [C55 C56] [C61 C62]
Tensile Strength	AC07	P07	18	[C31 C32 C33] [C34 C35 C36] [C37 C38 C39] [C40 C41 C42] [C54 C55 C56] [C60 C61 C62]
B. EXTRACTED AGGREGATE:				
Bulk Specific Gravity:				
Coarse Aggregate	AG01	P11	6	BV1, BV2, BV3, BR1, BR2, BR3
Fine Aggregate	AG02	P12	6	BV1, BV2, BV3, BR1, BR2, BR3
Type and Classification:				
Coarse Aggregate	AG03	P13	6	BV1, BV2, BV3, BR1, BR2, BR3
Fine Aggregate	AG03	P13	6	BV1, BV2, BV3, BR1, BR2, BR3
Gradation of Aggregate	AG04	P14	6	BV1, BV2, BV3, BR1, BR2, BR3
NAA Test for Fine Aggregate Particle Shape	AG05	P14A (note 2)	6	BV1, BV2, BV3, BR1, BR2, BR3
C. ASPHALT CEMENT:				
Abson Recovery	AE01	P21	6	BV1, BV2, BV3, BR1, BR2, BR3
Penetration at 77 and 115 °F	AE02	P22	6	BV1, BV2, BV3, BR1, BR2, BR3
Specific Gravity (60F)	AE03	P23	6	BV1, BV2, BV3, BR1, BR2, BR3
Viscosity at 77F	AE04	P24	6	BV1, BV2, BV3, BR1, BR2, BR3
Viscosity at 140F,275F	AE05	P25	6	BV1, BV2, BV3, BR1, BR2, BR3

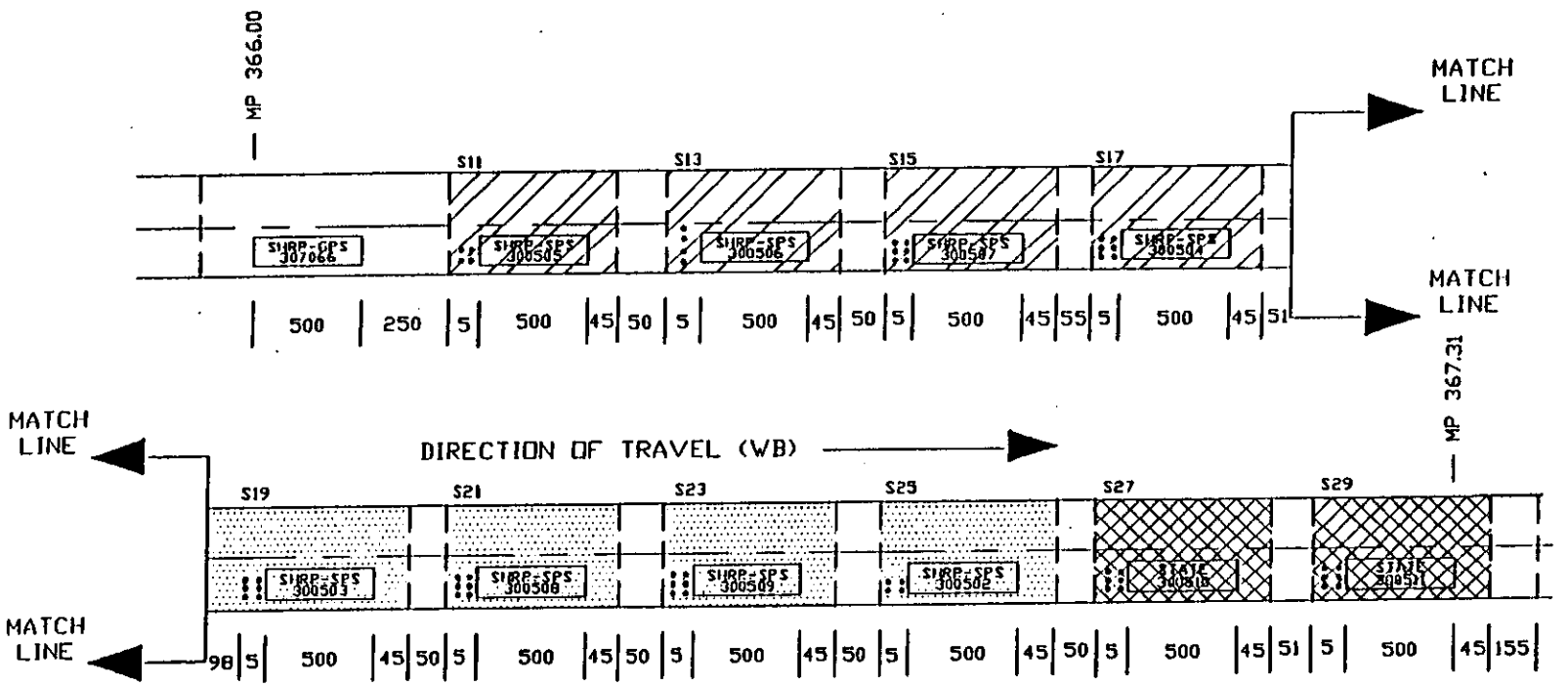
NOTES: 1 Creep compliance will be performed when suitable procedures are developed -- cores will be stored.
2 National Aggregate Association will perform tests at no cost to the State.

Figure 4

SPS-5 POST CONSTRUCTION SAMPLING LAYOUT

3005 I-90, WEST OF BIG TIMBER, MONTANA

NOT TO SCALE



● 4" OD Core of AC Overlay Layers

Virgin AC Overlay Treatments

Recycled AC Overlay Treatments

State Supplemental Treatments

November 5, 1991

Figure 5

MONTANA SPS - 5 CONSTRUCTION

Ten test sections were constructed by the Montana Department of Transportation (MDOT) as part of SHRP SPS-5 experiment. These test sections, each 500 feet long, are located in the travel lane in the west-bound direction of Interstate 90 between M.P. 366.00 and M.P. 367.31. Terrain over the entire section was relatively flat with a slight horizontal curve at the last two SHRP sections (300509 and 300502). Four sections of virgin mix and four sections of recycle mix were constructed along with two state supplemental sections. The recycled mix consisted of 30% RAP (Recycled Asphalt Pavement) mixed with asphalt and virgin aggregate. Both the virgin and the recycled asphalt mixes utilized the same asphalt cement.

Minimum preparation consisted of cold milling the open graded friction course of 0.96". Intensive preparation consisted of cold milling two inches of the entire surface layer in addition to milling the open graded friction coarse.

Montana Department of Transportation (MDOT) constructed two supplemental sections as part of its own experiment with Polybuilt and Kraton modified asphalt cement. Section 300510 was overlaid with an asphalt containing a polymer additive called a Polybuilt modifier developed by Exxon products, which was added to the virgin aggregate. This section had a final overlay thickness of five inches. Section 300511 was overlaid with a Kraton modified asphalt, developed by Shell products which was added to the virgin aggregate. The overlay thickness

for this section was also five inches. Both of these state supplemental sections had minimal surface preparation, i.e. only the open graded friction course was milled.

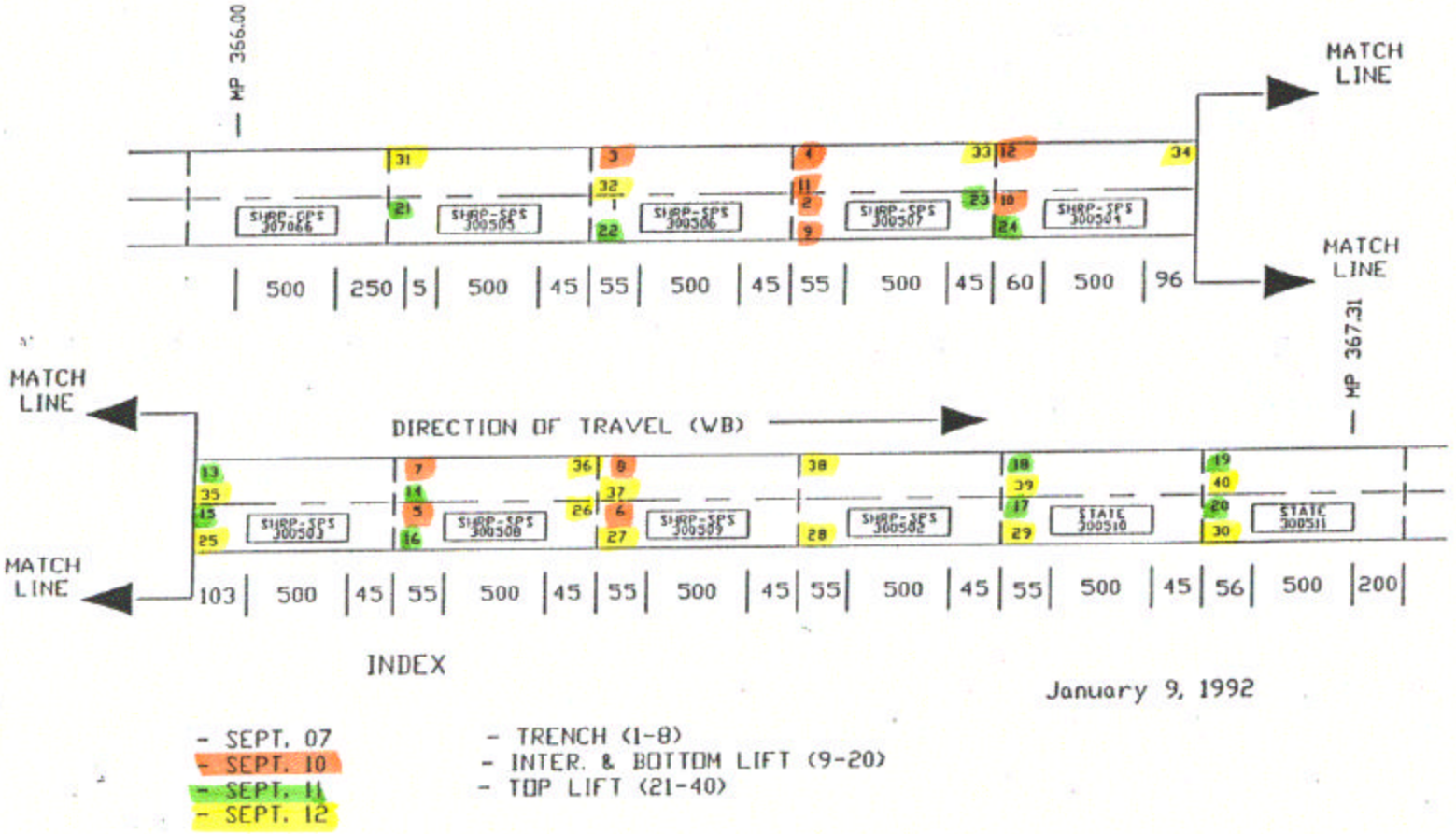
Section 300501 was originally laid out to be the control section for this experiment, however, due to the extensive deterioration of the roadway, MDOT requested a control section not be used. Montana's position was that the section would require rehabilitation, for safety reasons, within one full year and therefore, it would be very costly to come back in and overlay one section. Also, this section was unique in the fact that it has a GPS section located directly before the SPS sections. Therefore, MDOT proposed SHRP use this section as the "control," since it was monitored in 1989, 1990 and 1991, resulting in three data points prior to overlay. The three test dates should provide enough data to estimate the rate of deterioration. This GPS section was rehabilitated by removing the open graded friction coarse (OGFC) and adding a 2" lift of hot mix asphalt cement (HMAC) at the same time as the SPS sections were constructed and therefore, a control section no longer exists. SHRP agreed to this proposal. See Figure 6 for Montana's SPS-5 layout and construction sequencing. The numbers at the corners of each section depict the order of the paving operation.

The construction of the test sections began with milling operations on September 6, 1991 and paving operations ended September 12. The contractor was Empire Construction Inc of Billings, Montana. SHRP representatives present during construction were Mr. Jim Stevenson, MDOT; Mr. John Klemunes, SHRP/FHWA; and Mr. Pete Pradere, Nichols Consulting

SPS-5 LAYOUT

3005 I-90, WEST OF BIG TIMBER, MONTANA

NOT TO SCALE



INDEX

January 9, 1992

- SEPT. 07
- SEPT. 10
- SEPT. 11
- SEPT. 12

- TRENCH (1-8)
- INTER. & BOTTOM LIFT (9-20)
- TOP LIFT (21-40)

Figure 6

Engineers (WRCOC). Mr. Pradere was present for the milling and the first day of paving operations.

PAVING OPERATION

The following is a brief summary of the construction. Weather conditions were clear and sunny with a temperature of about 70°F, except for the first day of paving. Rain interrupted the paving operation September 7 nine feet into the second mill replacement trench section (300507).

A CMI 1000 with a 12.5 ft cutting width was used to mill the open graded mix, 0.96" from both lanes and shoulders for a total width of 38 feet. Milling of the OGFC was completed prior to SHRP representatives on-site visit. A CMI 750 with a cutting width of 12.5 feet was used to mill the SHRP and passing lanes original hot mix asphalt concrete on the intensive sections averaging 2.1 inches in depth per section. The shoulders were not milled. After the milling operation was complete, a Rod and Level survey was completed in the milled sections. When both lanes were milled, delamination had occurred only in the passing lane near center line.

All sections were broomed prior to a tack coat application. A tack coat of SS-1 emulsion was applied at a rate of 0.1 gallon per square yard. The dilution rate was not known.

The paving operations were as follows: The hot plant was located about 2 miles from the test sections. Belly dumps were used to haul the asphalt concrete and then unloaded to form

a windrow in the middle of the paving lane. The paver used a Cocal to pickup the asphalt from the windrow and load it into the hopper of the paving machine. The paving machine then proceeded to lay the asphalt. Paving operations were conducted with a Blaw-Knox 220 Paver utilizing a 30-foot ski for the electronic grade controls. Refer to Table 1 on Lift thicknesses and pavement widths. For intermediate and top lifts, a one foot wide beveled lane to lane joint and a three foot wide beveled lane to shoulder joint was used. When the sections were completed, the asphalt overlay appeared uniform with no segregation. All longitudinal joints were tight and uniform. When paving was completed for the day, a vertical face on the transverse joint was left in the transition zone. Problems were encountered with lift thickness and are discussed in detail in each sections comments and on page 18.

Compaction was accomplished with two rollers. The breakdown roller was a double steel drum 15 ton Dynapac CC50. Rolling included one vibrating pass with a frequency of 2500 cycles/minute and one static pass. The finishing roller was a double steel drum 10 ton Rex 1000. Rolling included one vibrating pass with a frequency of 2100 cycles/minute and one static pass. Both roller speeds were an average of 2.5 mph for vibrating and an average of 3.5 mph for static. A pneumatic rubber tired rolled was not utilized on this project. All sections used the same rolling pattern, one static and one vibratory pass for each roller. Initial compaction of the longitudinal beveled joint was minimal at best but was recompacted when the lift in the passing lane was placed. Density measurements were taken with a Troxler 3440 by MDOT. Two tests per lift per 500 foot section were taken. All density measurements passed. All equipment was relatively new and in good working order.

PAVEMENT LIFT THICKNESSES AND LANE WIDTHS

Minimum Preparation 2 inch Overlay				
SHRP Lane			Passing Lane	
Lift	Compacted Thickness (Inches)	Width (Feet)	Compacted Thickness (Inches)	Width (Feet)
Top	2.0	22	2.0	16

Minimum Preparation 5 inch overlay				
SHRP Lane			Passing Lane	
Lift	Compacted thickness (Inches)	Width (Feet)	Compacted thickness (Inches)	Width (Feet)
Bottom	2.0	22	2.0	16
Top	3.0	22	2.0	16

Intensive Preparation 2 inch Overlay				
SHRP Lane			Passing Lane	
Lift	Compacted thickness (Inches)	Width (Feet)	Compacted Thickness (Inches)	Width (Feet)
Trench Replacment	2.0	12.5	2.0	12.5
Top	2.0	22	2.0	16

Intensive Preparation 5 inch Overlay				
SHRP Lane			Passing Lane	
Lift	Compacted Thickness (Inches)	Width (Feet)	Compacted Thickness (Inches)	Width (Feet)
Trench Replacement	2.0	12.5	2.0	12.5
Bottom	2.0	22	2.0	16
Top	3.0	22	3.0	16

Note: Virgin and recycled lift thicknesses were similar

Table 1

Generally, three uncompacted thickness measurements were taken on each edge of every paving pass within a section and compacted thickness were taken when possible. All measured values are reported in the "Detailed Construction Notes" section of this report.

HOT PLANT:

The hot plant was a Boeing 4000 which was coal fired. The plant had a three bin setup; one coarse, one fine, and one RAP. The plant did not have a center feed for recycled mix and therefore, the RAP was combined with the coarse and fine aggregate on the feeder belt for the recycled mix. The recycled mixture contained the same asphalt cement and aggregate source used in the virgin mixture. Some concern was indicated due to the RAP material being fed into the plant near the burner. Mr. Jim Stevenson, of MDOT, did a visual inspection of the plant and said there was not a significant amount of smoke emitted from the plant when the recycled mix was used.

Several different samples were collected during the construction. The RAP mixture on grade was similar to the virgin aggregate. Both aggregate and asphalt samples were collected at the plant under Mr. Stevensons' supervision. These samples were collected the morning of September 10, 1991. The asphalt cement samples consisted of 11 five gallon pails and were sampled from a feed line between the storage tank and the hot plant. Two fifty-five gallon drums of the virgin aggregate were taken from the sample splitter on the cold feed belt to the

hot plant. The RAP aggregate required sampling from the stockpile with a front end loader. All mixture samples were collected in the field under the supervision of Mr. Stevenson. The asphalt concrete samples were taken on the afternoon of September 11, 1991. The samples, consisting of a total of 4 five gallon pails, were taken from the top lift of the travel lane near station 2+50 of the section 300506 (2 pails) and station 2+50 of section 300507 (2 pails). The recycled asphalt concrete was sampled in the field the morning of September 12, 1991. A total of 4 five gallon pails were extracted from the top lift of the travel lane; 2 pails near station 2+50 of section 300508 and 2 pails near station 2+50 of section 300509.

TRAFFIC CONTROL:

West bound traffic was diverted on a frontage road on September 6, to allow intensive milling and paving operations to begin. Traffic was not returned to the Interstate until all paving was completed on September 12, 1991. See Figures 7 - 10 for pictures of the construction operations.

PROBLEMS:

Overall, construction of the job went well. The only concerns brought up were from Mr. Stevenson about the lift thicknesses. Specifics of the lift thicknesses are discussed in the detailed construction notes. One reason for the varying lift thicknesses may be from the paver weight. Paving of the top lift required more hot mix due to additional widths and depth causing the

hopper in the paver to be overloaded and empty at times. This may have caused a weight distribution problem with the paver. Another possible reason is a malfunction in the electronic grade control. Mr. Stevenson had the contractor shut off the electronic controls for the 30 foot ski on some of the intermediate and top lifts to see if this was having an effect of the lift thickness. Once the contractor had shut off the electronic controls, lift thicknesses were somewhat more uniform although they still varied. When the contractor would cease paving for the day or go to the other lane, he would resume the use of the electronic controls.

PAVER AND COCAL PICKUP

AGGREGATE FEED ON DRUM DRYER
WHERE PLANT SAMPLES WERE TAKEN

FIGURE 7

BELLY DUMP DELIVERING HOT MIX

BREAKDOWN ROLLER COMPACTING THE INTERMEDIATE LIFT

FIGURE 8

INTERMEDIATE LIFT BEHIND PAVER

DELAMINATION OF PASSING LANE AFTER MILLING OPERATION

FIGURE 9

3 Ft LANE TO SHOULDER BEVEL

1 Ft LANE TO LANE BEVEL

FIGURE 10

DETAILED CONSTRUCTION NOTES

Below is a summary of the construction activities and data collected during the construction operations on a section by section basis. All loose and compacted lift thicknesses were measured during construction by pushing a probe into the asphalt and measuring the penetration with a ruler. A standard procedure of measuring lift thickness consisted of a left and right side lane measurement at stations 0+00, 2+50 and 5+00. See Table 1 for a listing of the lift thicknesses measured for each section. Appendix A contains completed construction data forms as required by SHRP. Appendix B contains transverse profiles and overlay thickness data for each SHRP section.

Loose Laydown and Compacted Lift Thicknesses

Section	Loose Laydown												Compacted					
	Trench Replacment Lift (Inch)				Intermediate Lift (Inch)				Top Lift (Inch)				Trench Replacement Lift (Inch)		Intermediate Lift (Inch)		Top Lift (Inch)	
	SHRP Lane		Passing Lane		SHRP Lane		Passing Lane		SHRP Lane		Passing Lane		SHRP Lane	Passing Lane	SHRP Lane	Passing Lane	SHRP Lane	Passing Lane
300507	CL	RT	CL	LT	CL	RT	CL	LT	CL	RT	CL	LT						
0+00	2.5	2.25	2.75	2.5	2.5	2.5	2.5	2.5	4.5	3.75	3.75	3.75						
1+50	2.5	3	3.5	3.5	3.5	3.5	2.5	2.5	3.5	3.5	3.75	3.75	2.75					
2+50	3.5																	
5+00	3	3	2.75	3.25	2.5	2.0	2.5	2.0	3.75	3.5	3.5	3.25						
300508																		
0+00	2.5	3.0	3.0	3.0	2.5	2.5	2.5	2.25	4.0	3.75	3.5	3.5						
2+50	2.5	2.75	2.75	2.75	2.5	2.5	2.5	2.5	3.75	3.75	3.5	3.5	2.25					
5+00	2.5	2.5	2.75	3.5	2.75	2.75	2.5	2.5	3.75	3.75	3.5	3.5	1.75					
300509																		
0+00	3.0	2.5	2.75	3.5					2.5	2.5	2.5	2.5						
2+50	2.5	2.75	2.75	2.75					2.75	2.5	2.5	2.5						
5+00	2.5	2.5	3.0	2.75					2.5	2.5	2.5	2.5	2.0					
300510																		
0+00					2.5	2.5	2.5	2.75	3.25	3.25								
2+50					2.5	2.5	2.5	2.5	3.5	3.5								
5+00					2.5	2.5	2.5	2.5	3.5	3.5								
300511																		
0+00					2.5	3.0	2.5	2.75	4.0	3.75								
2+50					2.5	2.5	2.5	2.75	3.75	3.75								
5+00					3.0	3.0	3.0	3.0	3.75	3.75								

Rt = Right Side
Lt = Left Side
CL = Center Line

Table 2

Section 300502 MINIMUM PREPARATION 2" RECYCLE MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: Paving started September 12 with a tack coat applied prior to paving. Paving started at 10:00 A.M. and ended at 10:30 A.M. The aggregate was well covered and the mixture looked good. The windrow temperature was 272°F with a laydown temperature of 245°F and a loose laydown lift thickness varying greatly. This section had more variance in lift thickness than all the other sections. Refer to page 18 for possible reasons behind varying lift thickness. Station 0+00 had a loose thickness of 3 inches, station 1+00 was 1.76 inches, station 2+50 was 2.25 inches, and station 5+00 was 2.5 inches. Due to the contractors operation, compacted lift thicknesses were not taken.

PASSING LANE: Paving the passing lane started September 12 with a tack coat applied prior to paving. Paving started at 1:00 P.M. and ending at 1:30 P.M. The windrow temperature was 271°F with a mean laydown temperature of 257°F and a loose laydown lift thickness of 2.5 inches. Due to the contractors operation, compacted lift thicknesses were not taken.

Section **300503** MINIMUM PREPARATION 5 INCH RECYCLE MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: The bottom lift was paved September 11 with a tack coat applied prior to paving. Paving began at 12:20 P.M. and ended at 12:35 P.M. The recycled aggregate was well covered and the mixture looked good. Windrow temperature was 267°F with a laydown temperature of 237°F and a loose laydown depth of 2.5 inches at stations 1+00 and 5+00 and a depth of 2 inches at station 0+00 and 2.75" at station 2+50.

The top lift was paved September 12 with a tack coat applied prior to paving. Paving began at 7:38 A.M. and ended at 8:15 A.M. Windrow temperature was 267°F with a laydown temperature of 244°F and an average loose lift thickness of 3.75 inches. Lift thickness at station 0+00 was 3.5 inches.

The windrows were not large enough so the contractor had the loader move hot mix from further up the windrow to the paver so the paver would not have to stop. In doing this, the loader tracked grass onto the tack coat. Approximately 10% of the shoulder and a few feet of the SHRP lane were covered with dried grass. The paver laid a lift over the grass on the SHRP lane.

PASSING LANE: The bottom lift was started September 11 with a tack coat applied prior to paving. Paving began at 11:30 A.M. and ended at 11:45 A.M. Windrow temperature was

261°F with a loose laydown temperature of 239°F and a loose laydown depth of 2.5 inches at station 2+50 and station 5+00. Station 0+00 had a loose laydown thickness of 1.75 inches.

The top lift was paved September 12 with a tack coat applied prior to paving. Paving began at 3:20 P.M. and ended at 3:39 P.M. Windrow temperature was 276°F with a laydown temperature of 261°F and a loose laydown depth of 3.5 inches throughout the section. Due to the contractors operations, compacted lift thicknesses were not taken.

Section **300504** MINIMUM PREPARATION 5 INCH VIRGIN MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: The bottom lift was paved September 10 with a tack coat applied prior to paving. Paving began at 4:15 P.M. and ended at 4:45 P.M. Windrow temperature was 274°F with a laydown temperature of 258°F and a loose laydown depth of 2.0 inches at station 2+50 and 3.0 inches at station 5+00. The rest of the section measured 2.5 inches in depth.

The top lift was started September 11 with a tack coat applied prior to paving. Paving began at 6:30 P.M. and ended at 7:00 P.M. Windrow temperature was 279°F with a laydown temperature of 268°F and a loose lift thickness of 3.75 inches at station 0+00. The loose lift thicknesses at station 2+50 and 5+00 was 3.5 inches.

The windrows were not large enough so the contractor had the loader move hot mix from further up the windrow to the paver so the paver would not have to stop. In doing this, the

loader brought grass from its tires onto the tack coat. Approximately 10% of the shoulder and a few feet of the SHRP lane were covered with dried grass. The paver laid a lift over the grass on the SHRP lane. Due to the contractors operations, compacted lift thicknesses were not taken.

PASSING LANE: The bottom lift was started September 10 with a tack coat applied prior to paving. Paving began at 5:05 P.M. and ended at 5:25 P.M. Windrow temperature was 284°F with a laydown temperature of 275°F and a loose laydown depth of 2.5 inches throughout the section.

The top lift was started September 12 with a tack coat applied prior to paving. Paving began at 2:15 P.M. and ended at 2:37 P.M. Windrow temperature was 280°F with a laydown temperature of 269°F and a loose laydown depth of 3.5 inches. Due to the contractors operations, compacted lift thicknesses were not taken.

Section 300505 MINIMUM PREPARATION 2 INCH VIRGIN MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: The top lift was paved on September 11 with a tack coat applied prior to paving. Paving started at 5:00 P.M. and ending at 5:30 P.M. The windrow temperature was 282°F with a mean laydown temperature of 267°F and a loose laydown lift thickness of 2.5 inches

throughout the section. Due to the contractors operation, compacted lift thicknesses were not taken.

PASSING LANE: Paving of the bottom lift started September 12 with a tack coat applied prior to paving. Paving started at 1:00 P.M. and ending at 1:30 P.M. The mean laydown temperature was 266°F with a loose laydown lift thickness of 2.5 inches in depth throughout the section. Due to the contractors operation, compacted lift thicknesses were not taken.

Section 300506 INTENSIVE PREPARATION 2 INCH VIRGIN MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth. September 6, 1991, a 25 foot wide trench was milled an average of 2.1 inches in depth the entire 500 feet with a 25 foot transition on both ends outside of the 500 foot section. Milling of the intensive sections was accomplished by making two passes, one on the SHRP lane and one on the passing lane using a 12.5 foot cutting head. When both lanes were milled, minor delamination had occurred in the passing lane near the centerline of the roadway. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: The weather was overcast with a chance of rain, but the contractor started to pave. Paving of the trench replacement started September 7 with a tack coat applied prior to paving. Paving began at 12:17 P.M. and ended at 12:32 P.M. The windrow temperature was

290°F with a mean laydown temperature of 245°F and a loose laydown lift thickness of 2.7 inches in depth at station 5+00 and 2.5 inches in depth at station 0+00. By the time the contractor had completed paving of the trench section, it started to drizzle. The contractor continued to pave until 9 feet into section 300507 at which time it was pouring rain and a vertical transverse joint was made.

The top lift was started September 11 with a tack coat applied prior to paving. Paving began at 5:30 P.M. and ended at 6:00 P.M. Windrow temperature was 275°F with a laydown temperature of 257°F and a loose laydown lift thickness between 2.5 inches at station 0+00 to 2.8 inches at station 3+50. Due to the contractors operation, compacted lift thicknesses were not taken.

PASSING LANE: Since a tack coat had been applied to both the SHRP and the passing lanes of the trench sections of the virgin mix on September 7 before it started to rain, a second tack coat was placed prior to paving of the trench replacement on September 10. Paving started at 12:45 P.M. and ended at 1:00 P.M. The windrow temperature was 276°F with a mean laydown temperature of 270°F and a laydown lift thickness of three inches throughout the section. A 1 foot long section in the windrow at stations 4+25 and 4+85 had some contamination in the mixture. There were a few clumps of mud stuck on the aggregate in each contaminated spot. The contractor removed the contaminated material from the windrow. Later, the consensus was some mud had dropped into the mix from the bottom of the belly dump.

The top lift was started on September 12 with a tack coat applied prior to paving. Paving began at 1:30 P.M. and ended at 1:55 P.M. Windrow temperature was 283°F with a laydown

temperature of 273°F and a loose laydown depth of 2.5 inches at stations 0+00 and 2+50. Loose laydown depth at station 5+00 was 2.75 inches, a little thicker than specified. Due to the contractors operation, compacted lift thicknesses were not taken.

Section 300507 INTENSIVE PREPARATION 5 INCH VIRGIN MIX

September 3, 1991, the open graded asphalt was milled a depth of 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth. September 7, 1991, a 25 foot wide trench was milled an average depth of 2.0 inches the entire 500 feet with a 25-foot transition on both ends outside of the 500 foot section. When both lanes were milled, minor delamination had occurred in the passing lane near centerline. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: Rain on September 7 caused the paving of the SHRP lane trench replacement section to cease 9 feet into the section so a second tack coat was applied prior to paving the trench section on September 10. Paving began at 12:15 P.M. and ended at 12:37 P.M. The windrow temperature was 279°F with a laydown temperature of 266°F and a loose laydown depth between 2.25 inches at station 0+00 to 3.5 inches at station 2+50. The compacted lift measured 2.75 inches in depth at station 2+50.

A 1 foot long section in the windrow at station 4+50 had some contamination in the mixture. There were a few clumps of mud stuck on the aggregate in each contaminated spot.

The majority of the material was removed from the windrow. The contaminated material was mud from the bottom of the belly dump.

The intermediate lift was started September 10 with a tack coat applied prior to paving. Paving began at 4:00 P.M. and ended at 4:15 P.M. Windrow temperature was 285°F with a laydown temperature of 263°F and a loose laydown depth of 2.5 inches throughout the section.

The top lift was started September 11 with a tack coat applied prior to paving. Paving began at 6:00 P.M. and ended at 6:30 P.M. Windrow temperature was 285°F with a laydown temperature of 268°F and a loose lift thickness of 4.5 inches at station 0+00 to 3.5 inches at station 2+50. Mr. Stevenson expressed concern to the contractor about the variance in lift thickness of the SHRP lane and had them shut off the electronic controls.

The windrows were not large enough so the contractor had the loader take hot mix further up from the windrow and bring it closer to the paver so the paver wouldn't have to stop. In doing this, the loader tracked grass from its tires onto the tact coat causing the grass to stick. Approximately 10% of the shoulder and a few feet of the SHRP lane were covered with dried grass. The paver laid a lift over the grass on the SHRP lane.

The contractor had a problem with variations in the lift thickness, possibly due to the paver becoming overloaded and then empty on the top lift of the SHRP lane. Refer to 'PROBLEMS' on page 18.

PASSING LANE: The bottom lift was paved September 10, 1991 with a tack coat applied prior to paving. Paving began at 1:00 P.M. and ended at 1:15 P.M. Windrow temperature was

277°F with a laydown temperature of 270°F and a loose laydown thickness of 2.5 inches at station 0+00 to 3.5 inches at station 2+50.

The intermediate lift was started September 10 with a tack coat applied prior to paving. Paving began at 4:45 P.M. and ended at 5:05 P.M. Windrow temperature was 283°F with a laydown temperature of 263°F and a loose laydown depth of 2.5 inches throughout the section.

The top lift was started September 12 with a tack coat applied prior to paving. Paving began at 1:55 P.M. and ended at 2:15 P.M. Windrow temperature was 288°F with a laydown temperature of 267°F and a laydown depth of 3.75 inches at stations 0+00 and 2+50. The pavement thickness measured at station 5+00 was 3.5 inches.

The contractor had a problem with variations in the lift thickness, possibly due to the paver becoming overloaded and then empty on the top lift of the passing lane. Refer to 'PROBLEMS' on page 18. Due to the contractors operations, compacted lift thicknesses were not taken.

Section 300508 INTENSIVE PREPARATION 5 INCH RECYCLE MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth. September 7, 1991, a 25 foot wide trench was milled an average of 2.0 inches in depth the entire 500 feet with a 25 foot transition on both ends outside of the 500 foot section. When both lanes were milled, minor delamination had occurred in the passing lane near center line. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: Paving of the trench section was started September 10 with a tack coat applied prior to paving. Paving began at 1:35 P.M. and ended at 1:50 P.M. The windrow temperature was 270°F with a laydown temperature of 257°F and a loose laydown depth of 2.5 inches on the right side of the section. At the centerline, the right edge varied from 3 inches at station 0+00 to 2.5 inches at station 5+00. A 1 foot long section in the windrow at station 0+50 had some contamination in the mixture. There were a few clumps of mud stuck on the aggregate in each contaminated spot. The contractor removed most of the visible contaminants. The contaminated material was mud from the bottom of the belly dump.

The intermediate lift was started September 11 with a tack coat applied prior to paving. Paving began at 12:35 P.M. and ended at 12:55 P.M. Windrow temperature was 263°F with a laydown temperature of 248°F and a loose laydown depth of 2.5 inches at station 0+00 and 2.75 inches at station 5+00.

Paving of the top lift began September 12 with a tack coat applied prior to paving. Paving began at 8:15 A.M. and ended at 9:00 A.M. Windrow temperature was 271°F with a laydown temperature of 246°F and a lift thickness of 3.75 inches throughout the section. The windrows were not big enough so the contractor had the loader move hot mix from further up the windrow to the paver so the paver would not have to stop. In doing this, the loader tracked grass from its tires onto the tack coat. Approximately 10% of the shoulder and a few feet of the SHRP lane were covered with dried grass. The paver laid a lift over the grass on the SHRP lane.

PASSING LANE: The passing lane trench section was paved September 10, 1991 with a prior application of tack coat. Paving began at 2:30 P.M. and ended at 2:45 P.M. Windrow temperature was 275°F with a laydown temperature of 269°F and a loose laydown depth between 2.75 inches at station 2+50 and 3.5 inches at station 5+00.

The intermediate lift was started September 11 with a tack coat applied prior to paving. Paving began at 11:45 A.M. and ended at 12:15 P.M. Windrow temperature was 263°F with a laydown temperature of 233°F and a loose laydown depth of 2.5 inches.

The top lift was started September 12 with a tack coat applied prior to paving. Paving began at 3:39 P.M. and ended at 4:00 P.M. Windrow temperature was 272°F with a laydown temperature of 257°F and a loose laydown depth of 3.5 inches throughout the section. Due to the contractors operation, compacted lift thicknesses were not measured.

Section 300509 INTENSIVE PREPARATION 2 INCH RECYCLE MIX

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth. September 7, 1991, a 25 foot wide trench was milled an average of 2.0 inches in depth the entire 500 feet with 25 foot transitions on both ends outside of the 500 foot section. When both lanes were milled, minor delamination had occurred in the passing lane near centerline. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

SHRP LANE: Paving of the trench replacement began September 10 with a tack coat applied prior to paving. Paving started at 1:50 P.M. and ended at 2:10 P.M. The windrow temperature was 263°F with a mean laydown temperature of 250°F and a loose laydown lift thickness of 2.5 inches at stations 2+50 and 5+00 and 3.0 inches at station 0+00.

The top lift was paved September 12 with a tack coat applied prior to paving. Paving began at 9:00 A.M. and ended at 10:00 A.M. Windrow temperature was 261°F with a laydown temperature of 246°F and a loose laydown lift thickness of 2.5 inches throughout the section.

PASSING LANE: Paving of the trench replacement began September 10 with a tack coat applied prior to paving. The mean windrow temperature was 267°F with a laydown temperature of 264°F and loose laydown thickness of 3.5 inches at station 0+00 and 2.75 inches at stations 5+00 and 2+50.

The top lift was started on September 12 with a tack coat applied prior to paving. Paving began at 4:00 P.M. and ended at 4:20 P.M. Windrow temperature was 273°F with a laydown temperature of 258°F and a loose laydown depth of 2.5 inches throughout the section. Due to the contractors operations, compacted lift thicknesses were not taken.

Section 300510 5 INCH POLYBUILT MODIFIER

September 3, 1991, the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

DRIVING LANE: September 11, paving of the bottom lift began after a tack coat was applied. Paving started at 4:00 P.M. and ended at 4:30 P.M. The aggregate looked well covered and the mix looked good. The windrow temperature was 298°F with a laydown temperature of 273°F and a loose laydown thickness of 2.5 inches in depth throughout the section.

The top lift was paved on September 12 with a tack coat applied before paving. Paving of the SHRP lane started at 10:45 A.M. and ended at 11:30 A.M. The windrow temperature was 299°F with a laydown temperature of 277°F and a loose laydown depth of 3.25 inches at station 0+00 and 3.5 inches at stations 5+00 and 2+50. Due to the contractors operation, compacted lift thicknesses were not taken.

For both top and bottom lifts of the Polybuilt, the paver moved much slower than in the paving of the SHRP sections.

PASSING LANE: Paving of the bottom lift began on September 11 with a tack coat applied prior to paving. The paving started at 3:00 P.M. and ended at 3:20 P.M. The windrow temperature was 288°F with a mean laydown temperature of 268°F and a loose laydown depth of 2.5 inches throughout the section. Due to the contractors operation, compacted lift thicknesses were not taken.

No measurements or temperatures were taken from the top lift of the passing lane.

Section 300511 5 INCH KRATON MODIFIER

September 3, 1991 the open graded asphalt was milled 0.96 inches without a problem of delamination. The surface was consistent with ridges of 1/4" or less from the cutting teeth.

DRIVING LANE: Paving of the bottom lift started September 11 with a tack coat applied prior to paving. Paving began at 4:00 P.M. and ended at 4:30 P.M. The aggregate was well coated and the mixture looked good. The windrow temperature was 283°F with a laydown temperature of 255°F and a loose laydown thickness between 2.5 inches at station 2+50 and 3.0 inches at station 5+00.

The top lift was paved on September 12 with a tack coat applied before paving. Paving started at 11:30 A.M. and ended at 12:15 P.M. The windrow temperature was 280°F with a laydown temperature of 261°F and a loose laydown depth of 3.75 inches throughout the section. Due to the contractors operation, compacted lift thicknesses were not taken.

For both top and bottom lifts, the paver moved much slower than in the paving of the SHRP lanes.

PASSING LANE: Paving of the bottom lift started September 11 with a tack coat applied prior to paving. The paving started at 3:30 P.M. and ended at 4:00 P.M. The windrow temperature was 287°F with a laydown temperature of 269°F and a loose laydown depth varying from 2.5

inches at stations 0+00 and 2+50 to 3.0 inches at station 5+00. Due to the contractors operation, compacted lift thicknesses were not taken.

No measurements or temperatures were taken from the top lift of the passing lane.

APPENDIX A

SHRP REGION: WESTERN

STATE: Montana

SHRP SECTION ID NUMBER: 300500 Virgin Mix

EXPERIMENT NAME: SPS 5

HIGHWAY NUMBER: I-90 Westbound

DATE OF FIELD MATERIAL
SAMPLING AND FIELD TESTING: Sept 12, 1991

SUBMITTING CONTRACTOR: NICHOLS CONSULTING ENGINEERS

TOTAL SHEETS: 4
INCLUDING THIS COVER PAGE

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING
SAMPLING UNCOMPACTED BITUMINOUS PAVING MIXTURES
SAMPLING DATA SHEET 10

SHEET NUMBER 2 OF 4

HRP REGION Western STATE Montana
SPS EXPERIMENT NUMBER 5
ROUTE/HIGHWAY I-90 Lane OR Direction WB

STATE CODE 30
SPS PROJECT CODE 05
TEST SECTION NO. 09
FIELD SET NO. —

PERSON PERFORMING SAMPLING
NAME Jim Stevenson EMPLOYER Montana DOT
TITLE MATERIALS ENG

MIX PLANT
PLANT NAME Empire Construction
PLANT LOCATION Big Timber
PLANT TYPE Batch..... 1 Drum..... 2 Other (Specify)..... 3 [3]
DESCRIPTION OF MIX PLANT
MANUFACTURER OF ASPHALT PLANT Boeing
MODEL NUMBER 400 Coal Fired
BATCH SIZE

SAMPLING LOCATION [5]
Conveyor Belt..... 1 Stockpile..... 2 Haul Truck..... 3 Funnel Device..... 4
Roadway Prior to Compaction ..... 5 Station 2 + 50 Offset 1 (feet from O/S)
Other..... 6 (specify)

MIX TYPE "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete..... 2 [1]

LAYER TYPE [4]
Rut Level-Up..... 1 Mill Replacement..... 2 Binder Course..... 3
Surface Course..... 4 Surface Friction Layer..... 5

SAMPLE TYPE DESIGNATION [ ]
SAMPLE NUMBER [2]
APPROXIMATE SAMPLE SIZE (lbs) 2 5Gallon Buckets 100
DATE SAMPLED (Month - Day - Year) [09-12-91]
LOCATION SAMPLE SHIPPED TO Jim Moulthrop
DATE SHIPPED (Month-Day-Year) [9-17-91]

GENERAL REMARKS: A 5 gallon Bucket was Also Filled From SHRP Sections 300506, 300507

CERTIFIED
Field Crew Chief
Affiliation:

VERIFIED AND APPROVED
SHRP Representative
Affiliation: FHWA/SHRP

DATE 1-23-1992
Month- Day- Year

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING
LABORATORY SHIPMENT SAMPLES INVENTORY
FIELD OPERATIONS INFORMATION FORM 1

SHEET NUMBER 3 OF 4

SHRP REGION Western STATE Montana

SPS EXPERIMENT NO

ROUTE/HIGHWAY I-90 Lane OR Direction WB

SAMPLE/TEST LOCATION: ☐ Before Section ☐ After Section
☒ MIDDLE OF SECTION

STATE CODE	30
SPS PROJECT CODE	0501
TEST SECTION NO.	09
FIELD SET NO.	1

SAMPLING AREA No: SA- _____

FIELD WORK COMPLETED ON 09-12-91

Note: Use a separate form for each sampling area. Use additional sheets if necessary. Include summary information (Field Operations Information Form 2) and "as actual" sampling location plan sheets with this material samples inventory.

SAMPLE LOCATION	SAMPLE NUMBER	SAMPLE SIZE	SAMPLE TYPE	SAMPLE MATERIAL	SAMPLE CONDITION	LAB*
300500	1	100 lbs	VIRGIN			

* Enter number of laboratory, as specified below, each sample was sent to:

Lab No.(1) _____
Lab No.(2) _____
Lab No.(3) _____

GENERAL REMARKS: _____

CERTIFIED

_____
Field Crew Chief
ffiliation: _____

VERIFIED AND APPROVED

V. A Klemurosi
SHRP Representative
Affiliation: FHWA / SHRP

DATE

1 - 23 - 1992
Month- Day- Year

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING
SUMMARY OF MATERIAL SAMPLES SENT TO EACH LABORATORY
FIELD OPERATIONS INFORMATION FORM 2

SHEET NUMBER 4 OF 4

HRP REGION WESTERN STATE MONTANA
SPS EXPERIMENT NO 5
ROUTE/HIGHWAY I-90 Lane OR Direction WB
SAMPLE/TEST LOCATION: ☐ Before Section ☐ After Section

STATE CODE 30
SPS PROJECT CODE 0501
TEST SECTION NO. 00
FIELD SET NO. —

LABORATORY _____ WORK COMPLETED ON 09-12-91

NOTE: This is a summary of material samples sent to each laboratory based on the information from Field Operations Information Form 1. Complete one form for each laboratory that material samples were sent.

LAYER NO. (From Subgrade)	MATERIAL/SAMPLE TYPE		TOTAL NUMBER OF SAMPLES
_____	AC CORES:	4" Diameter____ 6" Diameter____ 12" Diameter____	
		AC Cores with Bound Base/Subbase	_____
		AC Cores with PCC	_____
		AC Cores with PCC and Bound Base/Subbase	_____
		PCC Cores with Bound Base/Subbase	_____
X	AC MIX BULK SAMPLES:	Fifty Pound Samples - ~~Virgin~~	2
		Recycled	_____
_____	PCC CORES:	4" Diameter____ 6" Diameter____	
_____	PCC BEAMS:		_____
_____	BOUND BASE CORES:	4" Diameter____	
_____	UNBOUND BASE SAMPLES:	(a) BAGS (BULK)_____ (b) JARS (MOISTURE)_____	
_____	BOUND SUBBASE CORES:	4" Diameter____	
_____	UNBOUND SUBBASE SAMPLES:	(a) BAGS (BULK)_____ (b) JARS (MOISTURE)_____	
1	SUBGRADE SAMPLES:	(a) BAGS (BULK)_____ (b) JARS (MOISTURE)_____	
		(c) THIN-WALLED TUBES____ (d) SPLITSPOON____ JARS	

GENERAL REMARKS: _____

CERTIFIED

_____
Field Crew Chief
Affiliation: _____

VERIFIED AND APPROVED

Mona Klemmedson
SHRP Representative
Affiliation: FHWA/SHRP

DATE

1-23-1992
Month- Day- Year

SHRP REGION: WESTERN

STATE: Montana

SHRP SECTION ID NUMBER: 300500 Recycle

EXPERIMENT NAME: SPS-5

HIGHWAY NUMBER: I-90 WestBound

DATE OF FIELD MATERIAL
SAMPLING AND FIELD TESTING: Sept. 11, 1991

SUBMITTING CONTRACTOR: NICHOLS CONSULTING ENGINEERS

TOTAL SHEETS: 4
INCLUDING THIS COVER PAGE

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING
SAMPLING UNCOMPACTED BITUMINOUS PAVING MIXTURES
SAMPLING DATA SHEET 10

SHEET NUMBER 2 OF 4

SHRP REGION Western STATE Montana
SPS EXPERIMENT NUMBER 5
ROUTE/HIGHWAY I-90 Lane OR Direction WB

STATE CODE 30
SPS PROJECT CODE 05
TEST SECTION NO. 00
FIELD SET NO. —

PERSON PERFORMING SAMPLING

NAME Jim Stevenson EMPLOYER Montana DOT

TITLE Material Eng

MIX PLANT

PLANT NAME Empire Construction

PLANT LOCATION Big Timber

PLANT TYPE Batch..... 1 Drum..... 2 Other (Specify)..... 3 [2]

DESCRIPTION OF MIX PLANT

MANUFACTURER OF ASPHALT PLANT Boeing

MODEL NUMBER 400 COAL FIRED

BATCH SIZE

SAMPLING LOCATION [5]

Conveyor Belt..... 1 Stockpile..... 2 Haul Truck..... 3 Funnel Device..... 4
Roadway Prior to Compaction ..... 5 Station 2 + 50 Offset 1 (feet from O/S)
Other..... 6 (specify)

MIX TYPE "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete..... 2 [2]

LAYER TYPE [4]

Rut Level-Up..... 1 Mill Replacement..... 2 Binder Course..... 3
Surface Course..... 4 Surface Friction Layer..... 5

SAMPLE TYPE DESIGNATION [ ]

SAMPLE NUMBER [1]

APPROXIMATE SAMPLE SIZE (lbs) 100

DATE SAMPLED (Month - Day - Year) [09 - 11 - 91]

LOCATION SAMPLE SHIPPED TO Jim Moulthrop

DATE SHIPPED (Month-Day-Year) [09 - 17 - 91]

GENERAL REMARKS: A 5 gallon Bucket was also filled from SHRP Section 300508, 800509

CERTIFIED

Field Crew Chief
Affiliation:

VERIFIED AND APPROVED
SHRP Representative
Affiliation: SHRP/FHWA

DATE 1 - 23 - 1992
Month- Day- Year

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING
LABORATORY SHIPMENT SAMPLES INVENTORY
FIELD OPERATIONS INFORMATION FORM 1

SHEET NUMBER 3 OF 4

HRP REGION Western STATE Montana
SPS EXPERIMENT NO 5
ROUTE/HIGHWAY I-90 Lane OR Direction WB
SAMPLE/TEST LOCATION: ☐ Before Section ☐ After Section
☒ MIDDLE OF SECTION

STATE CODE	30
SPS PROJECT CODE	05
TEST SECTION NO.	00
FIELD SET NO.	—

SAMPLING AREA No: SA- _____

FIELD WORK COMPLETED ON 09-18-91

Note: Use a separate form for each sampling area. Use additional sheets if necessary. Include summary information (Field Operations Information Form 2) and "as actual" sampling location plan sheets with this material samples inventory.

SAMPLE LOCATION	SAMPLE NUMBER	SAMPLE SIZE	SAMPLE TYPE	SAMPLE MATERIAL	SAMPLE CONDITION	LAB*
300500	2	100 lbs	RAP			

* Enter number of laboratory, as specified below, each sample was sent to:

Lab No.(1) _____
Lab No.(2) _____
Lab No.(3) _____

GENERAL REMARKS: _____

CERTIFIED

_____
Field Crew Chief
ffiliation: _____

VERIFIED AND APPROVED
John A Kennura Jr.
SHRP Representative
Affiliation: SHRP/FHWA

DATE
1-23-1992
Month- Day- Year

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING
SUMMARY OF MATERIAL SAMPLES SENT TO EACH LABORATORY
FIELD OPERATIONS INFORMATION FORM 2

SHEET NUMBER 4 OF 4

HRP REGION Western STATE Montana
SPS EXPERIMENT NO 5
ROUTE/HIGHWAY I-90 Lane OR Direction WB
SAMPLE/TEST LOCATION: ☐ Before Section ☐ After Section

STATE CODE 30
SPS PROJECT CODE 05
TEST SECTION NO. 00
FIELD SET NO. —

LABORATORY _____ WORK COMPLETED ON 09-12-91

NOTE: This is a summary of material samples sent to each laboratory based on the information from Field Operations Information Form 1. Complete one form for each laboratory that material samples were sent.

LAYER NO. (From Subgrade)	MATERIAL/SAMPLE TYPE		TOTAL NUMBER OF SAMPLES
_____	AC CORES:	4" Diameter_____ 6" Diameter_____ 12" Diameter_____	
		AC Cores with Bound Base/Subbase	_____
		AC Cores with PCC	_____
		AC Cores with PCC and Bound Base/Subbase	_____
		PCC Cores with Bound Base/Subbase	_____
X	AC MIX BULK SAMPLES:	Fifty Pound Samples - Virgin	_____
		~~Recycled~~	2
_____	PCC CORES:	4" Diameter_____ 6" Diameter_____	
_____	PCC BEAMS:		_____
____	BOUND BASE CORES:	4" Diameter_____	
_____	UNBOUND BASE SAMPLES:	(a) BAGS (BULK)_____ (b) JARS (MOISTURE)_____	
_____	BOUND SUBBASE CORES:	4" Diameter_____	
_____	UNBOUND SUBBASE SAMPLES:	(a) BAGS (BULK)_____ (b) JARS (MOISTURE)_____	
1	SUBGRADE SAMPLES:	(a) BAGS (BULK)_____ (b) JARS (MOISTURE)_____	
		(c) THIN-WALLED TUBES_____ (d) SPLITSPOON _____ JARS	

GENERAL REMARKS: _____

CERTIFIED

_____
Field Crew Chief
Affiliation: _____

VERIFIED AND APPROVED

John A Klemurak
SHRP Representative
Affiliation: SHRP/FHWA

DATE

1-23-1992
Month- Day- Year

LTPP-SPS CONSTRUCTION DATA REFERENCE PROJECT STATION TABLE CONSTRUCTION DATA SHEET 1	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [00]

ORDER	TEST SECTION ID NO (1)	REFERENCE PROJECT STATION NUMBER		(4) CUT-FILL[1]	
		(2) START	(3) END	TYPE	STATION
1	300505	0+00	5+00	2	+
2	300506	6+00	11+00	2	+
3	300507	12+00	17+00	2	+
4	300504	18+00	23+00	2	+
5	300503	24+98	29+98	2	+
6	300508	30+98	35+98	2	+
7	300509	36+98	41+98	2	+
8	30050A	42+98	47+98	2	+
9	300510	48+98	53+98	2	+
10	300511	54+99	59+99	2	+
11		+	+		+
12		+	+		+
13		+	+		+
14		+	+		+
15		+	+		+
16		+	+		+
17		+	+		+
18		+	+		+
19		+	+		+
20		+	+		+

5. SPS - GPS TEST SECTION EQUALITIES

GPS section _____ is the same as SPS section _____

GPS section _____ is the same as SPS section _____

6. INTERSECTIONS BETWEEN TEST SECTION ON THE PROJECT

ROUTE	PROJECT STATION NO.	RAMPS EXIT	RAMPS ENT	INTERSECTION STOP	INTERSECTION SIGNAL	INTERSECTION UNSIG
	+__					
	+__					
	+__					

Note 1. Indicate the type of subgrade section the test section is located on:

Cut..... 1 Fill..... 2 At-Grade..... 3 Cut and Fill..... 4

If cut-fill transition is located in a test section, enter test section station of the cut-fill transition location.

PREPARER John A Klemmes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [02]

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE CLASS	4. LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[62]				
2	[06]	[62]	[13.9]	_ _ _._	_ _ _._	_ _ _._
3	[05]	[22]	[_2.75]	_ _ _._	_ _ _._	_ _ _._
4	[03]	[01]	[_5.75]	_ _ _._	_ _ _._	_ _ _._
5	[09]	[02]	[_0.0]	_ _ _._	_ _ _._	_ _ _._
6	[02]	[86]	[_0.1]	_ _ _._	_ _ _._	_ _ _._
7	[01]	[13]	[_2.0]	_ _ _._	_ _ _._	_ _ _._
8	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
9	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
10	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
11	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
12	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
13	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
14	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
15	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._

NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.
2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

   If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.
3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11-5-91

NO SKETCH

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 2]

PREPARER K Kemmes EMPLOYER SHRP/FHWA DATE 11/6/91

NO patching

LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __]

2. DATE PATCHING OPERATIONS COMPLETED [__ __-__ __-__ __]

3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

5. SUMMARY OF PATCHING

	NUMBER	TOTAL AREA (SQ. FT.)
Surface Only	[__ __]	[__ __ __ __]
Surface and partial base replacement	[__ __]	[__ __ __ __]
Full depth	[__ __]	[__ __ __ __]

6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES [__]
   Deflection.... 1 Coring.... 2 Visual..... 3
   Other..... 4 (specify)_____

7. METHOD USED TO FORM PATCH BOUNDARIES [__]
   None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling..... 4
   Other..... 5 (Specify)_____

8. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

9. PATCH MATERIAL [__]
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6
   Other.. 7 (Specify)_____

10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

3 PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

NO Level-up

LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 2]

1. DATE LEVEL-UP LAYER APPLIED [__ __-__ __-__ __]

2. PLACEMENT LOCATION OF LEVEL-UP LAYER [__]
   Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4

3. LENGTH OF TEST SECTION COVERED [__]
   Full Length of Test Section 1
   Partial Length of Test Section .... 2 (enter start and end station numbers)
   Outside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __
   Inside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __

4. AVERAGE RUT DIMENSIONS (Inches)

	DEPTH	WIDTH
Outside Wheel Path Rut	[__ . __]	[__ __.__]
Inside Wheel Path Rut	[__ . __]	[__ __.__]

5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP [__]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4
   Wheel Path Milling..... 5 (specify, inches) DEPTH __.__ WIDTH __.__
   Other..... 6 (Specify) _____

6. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

7. TYPE OF LEVEL-UP MATERIAL
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5
   Other... 6 (Specify) _____

8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__ __]

9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/Ethos DATE 11-5-91

OPEN GRADED

October 1990

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [02]

1. DATE OF MILLING OPERATION [09-03-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 1000

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]
Outside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [__0]

8. Height of Ridge Between Parallel Passes? (Inches) [__.0]

9. Other Comments? (Yes, No) [NO]
   Comments _____

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [__48]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [NO]
13. LAYER NUMBER OF MILL REPLACEMENT [7]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [__0.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [2]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__ __ . __]

17. COMMENTS _____

PREPARER K. Lemons EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [02]

1. SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLAY [3]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4

2. TACK COAT
   Layer Numbers [__ __] [06]
   Material Type None..... 1 SS-1.... 2 SS-1H.... 3 CRS-1.... 4 [02]
   CRS-2.... 5 CMS-2.... 6 CMS-2H.. 7 CSS-1.... 8 CSS-1H... 9
   Other.... 10 (Specify) _____

3. TACK COAT DILUTION
   (Percent) [__ __]
   Mixing Rate Parts Diluent __ TO Parts Asphalt __

4. TACK COAT APPLICATION RATE (Gal/Sq. Yd.) [0.1]

5. ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers
Plant 1	[2]	Boeing 400	[__ __ 4]	[__ 8]	[1] [__] [__]
Plant 2	[__]	_____	[__ __ __]	[__ __]	[__] [__] [__]
Plant 3	[__]	_____	[__ __ __]	[__ __]	[__] [__] [__]

   Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify _____

6. MANUFACTURER OF ASPHALT CONCRETE PAVER Blaw-Knox

7. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER 220 1971

8. SINGLE PASS LAYDOWN WIDTH (Feet) [22.0]

9. AC BINDER COURSE LIFT

Layer Number	7	__ __	[__ __]
Nominal First Lift Placement Thickness (Inches)	2.25	__.__	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

10. AC SURFACE COURSE LIFT

Layer Number	__ __	__ __	[__ __]
Nominal First Lift Placement Thickness (Inches)	__.__	__.__	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

11. SURFACE FRICTION COURSE
    Layer Number [__ __]
    Nominal Placement Thickness (Inches) [__.__]

12. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [__ + __ __]
    Surface Course [__ + __ __]
    Surface Friction Course [__ + __ __]

13. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2 (specify offset from O/S feet) [__ __.__]

14. SIGNIFICANT EVENTS DURING CONSTRUCTION(disruptions, rain, equip. problems, etc.)

_____

_____

PREPARER Klemmer EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [02]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-10-91]
2. DATE PAVING OPERATIONS COMPLETED [9-12-91]

3. LAYER NUMBER SURFACE [7]

4. MIXING TEMPERATURE (°F) [295.]

5. LAYDOWN TEMPERATURES (°F)
   Mean..... 295.
   Minimum..... 285.
   Standard Deviation... ___.__
   Number of Tests ..... 3.
   Maximum..... 290.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	___.__				
7	B	Steel-Whl Tandem	___.__				
8	C	Steel-Whl Tandem	___.__				
9	D	Steel-Whl Tandem	___.__				
10	E	Pneumatic-Tired	___.__	___.__			
11	F	Pneumatic-Tired	___.__	___.__			
12	G	Pneumatic-Tired	___.__	___.__			
13	H	Pneumatic-Tired	___.__	___.__			
14	I	Single-Drum Vibr.	___.__		___.__	___.__	___.__
15	J	Single-Drum Vibr.	___.__		___.__	___.__	___.__
16	K	Single-Drum Vibr.	___.__		___.__	___.__	___.__
17	L	Single-Drum Vibr.	___.__		___.__	___.__	___.__
18	M	Double-Drum Vibr.	15.0		___.__	___.__	___.__
19	N	Double-Drum Vibr.	10.0		___.__	___.__	___.__
20	O	Double-Drum Vibr.	___.__		___.__	___.__	___.__
21	P	Double-Drum Vibr.	___.__		___.__	___.__	___.__
22	Q	Other					

Both 2.5mph-Vib 3.5mph-Stat

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M	___	___	___
24	Coverages	2.	___.__	___.__	___.__
	INTERMEDIATE				
25	Roller Code (A-Q)	___	___	___	___
26	Coverages	___.__	___.__	___.__	___.__
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N	___	___	___
28	Coverages	2.	___.__	___.__	___.__
29	Air Temperature (°F)	75.	___.__	___.__	___.__
30	Compacted Thickness (In)	___.__	___.__	___.__	___.__
31	Curing Period (Days)	___.__	___.__	___.__	___.__

PREPARER K Hemmes EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [02]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C)[1]				A	
Rod Depth (Inches)				00	
Number of Measurements				02	
Average (pcf)				147.9	
Maximum (pcf)				148.9	
Minimum (pcf)				146.8	
Standard Deviation (pcf)					
Layer Number				07	

[1]Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACURER OF NUCLEAR DENSITY GAUGE TROXLER

3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3440

4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 16505

5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3556

6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2	
Profile Index (Inches/Mile)	
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3	
Height of Blanking Band (Inches)	
Cutoff Height (Inches)	

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) NO

PREPARER Klemmcs EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
0+00	0 4 7 13 15	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	96.3 96.4 96.4 96.3 96.3	— — . — — — . — — — . — — — . — — — . —
0+50	0 7 8 11 15	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	96.3 96.3 96.3 96.3 96.3	— — . — — — . — — — . — — — . — — — . —
1+00	0 7 12 11 10	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	96.3 96.3 96.3 96.3 96.3	— — . — — — . — — — . — — — . — — — . —
1+50	0 7 13 11 10	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	96.3 96.3 96.3 96.3 96.3	— — . — — — . — — — . — — — . — — — . —
2+00	0 9 7 11 14	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	96.3 96.3 96.3 96.3 96.3	— — . — — — . — — — . — — — . — — — . —
2+50	0 6 12 15 17	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	96.3 96.3 96.3 96.3 96.3	— — . — — — . — — — . — — — . — — — . —
3+00	0 7 12 14 18	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	96.3 96.3 96.3 96.3 96.3	— — . — — — . — — — . — — — . — — — . —
LAYER NUMBER		— —	— —	— —	07	— —

PREPARER John Klemmes EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [02]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	0 3 7 11 14				9.2 9.2 9.2 9.2 9.1	
4+00	0 3 7 11 14				9.2 9.2 9.2 9.2 9.0	
4+50	0 3 7 11 15				9.2 9.2 9.2 9.2 9.0	
5+00	0 4 7 11 15				9.3 9.2 9.2 9.2 9.0	
__+__						
__+__						
__+__						
LAYER NUMBER					07	

PREPARER John Kennedy EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [02]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod & level surveys were completed before and after construction. No measurements were taken between lifts

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [03]

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE CLASS	4. LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[62]				
2	[06]	[62]	[_14.5]	_ _ _._	_ _ _._	_ _ _._
3	[05]	[22]	[_ 4.25]	_ _ _._	_ _ _._	_ _ _._
4	[03]	[01]	[_ 5.75]	_ _ _._	_ _ _._	_ _ _._
5	[09]	[02]	[_ 9.0]	_ _ _._	_ _ _._	_ _ _._
6	[02]	[86]	[_ 0.1]	_ _ _._	_ _ _._	_ _ _._
7	[01]	[13]	[_ 2.0]	_ _ _._	_ _ _._	_ _ _._
8	[02]	[86]	[_ 0.1]	_ _ _._	_ _ _._	_ _ _._
9	[01]	[13]	[_ 3.0]	_ _ _._	_ _ _._	_ _ _._
10	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
11	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
12	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
13	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
14	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
15	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._

NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.
2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

   If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.
3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER K Kemunes EMPLOYER SHRP/FHWA DATE 11/5/91

NO picture

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 3]

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11-5-91

NO patches

LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 3]

1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __]

2. DATE PATCHING OPERATIONS COMPLETED [__ __-__ __-__ __]

3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

5. SUMMARY OF PATCHING

	NUMBER	TOTAL AREA (SQ. FT.)
Surface Only	[__ __]	[__ __ __ __]
Surface and partial base replacement	[__ __]	[__ __ __ __]
Full depth	[__ __]	[__ __ __ __]

6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES [__]
   Deflection.... 1 Coring.... 2 Visual..... 3
   Other..... 4 (specify)_____

7. METHOD USED TO FORM PATCH BOUNDARIES [__]
   None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling..... 4
   Other..... 5 (Specify)_____

8. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

9. PATCH MATERIAL [__]
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6
   Other.. 7 (Specify)_____

10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER R/Simmons EMPLOYER SHRP/FHWA DATE 11-5-91

NO Level-up

LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 3]

1. DATE LEVEL-UP LAYER APPLIED [__ __-__ __-__ __]

2. PLACEMENT LOCATION OF LEVEL-UP LAYER [__]
   Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4

3. LENGTH OF TEST SECTION COVERED [__]
   Full Length of Test Section 1
   Partial Length of Test Section .... 2 (enter start and end station numbers)
   Outside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __
   Inside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __

4. AVERAGE RUT DIMENSIONS (Inches)

	DEPTH	WIDTH
Outside Wheel Path Rut	[__ . __]	[__ __.__]
Inside Wheel Path Rut	[__ . __]	[__ __.__]

5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP [__]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4
   Wheel Path Milling..... 5 (specify, inches) DEPTH __.__ WIDTH __.__
   Other..... 6 (Specify) _____

6. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

7. TYPE OF LEVEL-UP MATERIAL
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5
   Other... 6 (Specify) _____

8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__ __]

9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

OPEN GRADED

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [03]

1. DATE OF MILLING OPERATION [09-03-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMT

3. MILLING MACHINE MODEL DESIGNATION (Specify) 1000

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]
Outside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [__0]

8. Height of Ridge Between Parallel Passes? (Inches) [__.0]

9. Other Comments? (Yes, No) [NO]
   Comments _____

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [__48]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [NO]
13. LAYER NUMBER OF MILL REPLACEMENT [7]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [__0.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [2]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__ __.__]

17. COMMENTS _____

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [03]

1. SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLAY [3]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4

2. TACK COAT
   Layer Numbers [06] [08]
   Material Type None..... 1 SS-1.... 2 SS-1H.... 3 CRS-1.... 4 [09]
   CRS-2.... 5 CMS-2.... 6 CMS-2H.. 7 CSS-1.... 8 CSS-1H... 9
   Other.... 10 (Specify) _____

3. TACK COAT DILUTION
   (Percent) [__ __]
   Mixing Rate Parts Diluent ___ TO Parts Asphalt ___

4. TACK COAT APPLICATION RATE (Gal/Sq. Yd.) [0.1]

5. ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers
Plant 1	[2]	Boeing 400	[__ 4]	[__ 8]	[7] [9] [__]
Plant 2	[__]	_____	[__ __]	[__ __]	[__] [__] [__]
Plant 3	[__]	_____	[__ __]	[__ __]	[__] [__] [__]

   Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify _____

6. MANUFACTURER OF ASPHALT CONCRETE PAVER Blaw-Knox

7. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER 820 1971

8. SINGLE PASS LAYDOWN WIDTH (Feet) Intermediate, Surface [22.0]

9. AC BINDER COURSE LIFT

Layer Number	__ __	__ __	[__ __]
Nominal First Lift Placement Thickness (Inches)	__.__	__.__	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

10. AC SURFACE COURSE LIFT

Layer Number	7	9	[__ __]
Nominal First Lift Placement Thickness (Inches)	2.5	3.25	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

11. SURFACE FRICTION COURSE
    Layer Number [__ __]
    Nominal Placement Thickness (Inches) [__.__]

12. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [__ + __ __]
    Surface Course [__ + __ __]
    Surface Friction Course [__ + __ __]

13. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2 (specify offset from O/S feet) [__ __.__]

14. SIGNIFICANT EVENTS DURING CONSTRUCTION(disruptions, rain, equip. problems, etc.)

_____

_____

PREPARER K Romines EMPLOYER FHWA/SHRP DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-11-91]
2. DATE PAVING OPERATIONS COMPLETED [9-12-91]
3. LAYER NUMBER Bottom [2]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 236.
   - Minimum..... 232.
   - Standard Deviation... ___.
   - Number of Tests ..... 3.
   - Maximum..... 241.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem					
7	B	Steel-Whl Tandem					
8	C	Steel-Whl Tandem					
9	D	Steel-Whl Tandem					
10	E	Pneumatic-Tired					
11	F	Pneumatic-Tired					
12	G	Pneumatic-Tired					
13	H	Pneumatic-Tired					
14	I	Single-Drum Vibr.					
15	J	Single-Drum Vibr.					
16	K	Single-Drum Vibr.					
17	L	Single-Drum Vibr.					
18	M	Double-Drum Vibr.	15.0				Both 2.5mph-VC
19	N	Double-Drum Vibr.	10.0				3.5mph-ST
20	O	Double-Drum Vibr.					
21	P	Double-Drum Vibr.					
22	Q	Other					

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M			
24	Coverages	2.			
	INTERMEDIATE				
25	Roller Code (A-Q)				
26	Coverages				
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N			
28	Coverages	2.			
29	Air Temperature (°F)				
30	Compacted Thickness (In)				
31	Curing Period (Days)				

PREPARER Klemmos EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [0501] * TEST SECTION NO. [0301]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-12-91]
2. DATE PAVING OPERATIONS COMPLETED [9-12-91]
3. LAYER NUMBER SURFACE [9]
4. MIXING TEMPERATURE (°F) [295]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 249
   - Minimum..... 240
   - Standard Deviation... ---
   - Number of Tests 3
   - Maximum..... 248

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem					
7	B	Steel-Whl Tandem					
8	C	Steel-Whl Tandem					
9	D	Steel-Whl Tandem					
10	E	Pneumatic-Tired					
11	F	Pneumatic-Tired					
12	G	Pneumatic-Tired					
13	H	Pneumatic-Tired					
14	I	Single-Drum Vibr.					
15	J	Single-Drum Vibr.					
16	K	Single-Drum Vibr.					
17	L	Single-Drum Vibr.					
18	M	Double-Drum Vibr.	150				Both 2.5mph-VIB 3.5mph-STA
19	N	Double-Drum Vibr.	100				
20	O	Double-Drum Vibr.					
21	P	Double-Drum Vibr.					
22	Q	Other					

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M			
24	Coverages	2			
	INTERMEDIATE				
25	Roller Code (A-Q)				
26	Coverages				
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N			
28	Coverages	2			
29	Air Temperature (°F)	50			
30	Compacted Thickness (In)				
31	Curing Period (Days)				

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [03]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C)[1]			A	A	
Rod Depth (Inches)			00	00	
Number of Measurements			02	02	
Average (pcf)			148.4	147.8	
Maximum (pcf)			148.5	148.0	
Minimum (pcf)			148.2	147.5	
Standard Deviation (pcf)					
Layer Number			07	09	

Tester noted these two measurements as 1st Lift which is not the case

[1]Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACURER OF NUCLEAR DENSITY GAUGE TROXLER

3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3440

4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 16505

5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3556

6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2	
Profile Index (Inches/Mile)	
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3	
Height of Blanking Band (Inches)	
Cutoff Height (Inches)	

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) NO

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [03]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
0+00	0	— — . —	— — . —	— — . —	4 . 4	— — . —
	3	— — . —	— — . —	— — . —	4 . 7	— — . —
	7	— — . —	— — . —	— — . —	4 . 8	— — . —
	11	— — . —	— — . —	— — . —	4 . 7	— — . —
	15	— — . —	— — . —	— — . —	4 . 8	— — . —
0+50	0	— — . —	— — . —	— — . —	4 . 3	— — . —
	3	— — . —	— — . —	— — . —	5 . 0	— — . —
	7	— — . —	— — . —	— — . —	4 . 7	— — . —
	11	— — . —	— — . —	— — . —	4 . 7	— — . —
	15	— — . —	— — . —	— — . —	4 . 1	— — . —
1+00	0	— — . —	— — . —	— — . —	4 . 3	— — . —
	3	— — . —	— — . —	— — . —	4 . 8	— — . —
	7	— — . —	— — . —	— — . —	4 . 8	— — . —
	11	— — . —	— — . —	— — . —	4 . 8	— — . —
	14	— — . —	— — . —	— — . —	4 . 6	— — . —
1+50	0	— — . —	— — . —	— — . —	4 . 6	— — . —
	3	— — . —	— — . —	— — . —	5 . 0	— — . —
	7	— — . —	— — . —	— — . —	5 . 0	— — . —
	10	— — . —	— — . —	— — . —	5 . 0	— — . —
	14	— — . —	— — . —	— — . —	4 . 6	— — . —
2+00	0	— — . —	— — . —	— — . —	4 . 5	— — . —
	3	— — . —	— — . —	— — . —	4 . 9	— — . —
	7	— — . —	— — . —	— — . —	4 . 8	— — . —
	11	— — . —	— — . —	— — . —	5 . 0	— — . —
	14	— — . —	— — . —	— — . —	4 . 9	— — . —
2+50	0	— — . —	— — . —	— — . —	4 . 7	— — . —
	3	— — . —	— — . —	— — . —	5 . 3	— — . —
	7	— — . —	— — . —	— — . —	5 . 3	— — . —
	11	— — . —	— — . —	— — . —	5 . 4	— — . —
	17	— — . —	— — . —	— — . —	5 . 4	— — . —
3+00	0	— — . —	— — . —	— — . —	4 . 8	— — . —
	3	— — . —	— — . —	— — . —	5 . 5	— — . —
	7	— — . —	— — . —	— — . —	5 . 5	— — . —
	11	— — . —	— — . —	— — . —	5 . 4	— — . —
	14	— — . —	— — . —	— — . —	5 . 4	— — . —
LAYER NUMBER		— —	— —	— —	— 9	— —

PREPARER Klemmos EMPLOYER SHRP/FHWA DATE 1/14/92

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [03]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	0				4.8	
	34				5.5	
	74				5.0	
	111				5.4	
	150				5.4	
4+00	0				4.7	
	39				5.0	
	80				5.4	
	122				5.6	
	152				5.3	
4+50	0				4.2	
	34				4.8	
	76				5.0	
	122				5.3	
	152				5.4	
5+00	0				4.6	
	33				4.9	
	74				5.0	
	121				5.3	
	151				5.4	
_+_ _						
_+_ _						
_+_ _						
LAYER NUMBER					9	

PREPARER Kemmes EMPLOYER SHRP/FHWA DATE 1/14/92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [03]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod & level surveys were completed before and after construction. No measurements were taken between lifts.

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 1/4/92

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [04]

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE CLASS	4. LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[62]				
2	[06]	[62]	[14.5]			
3	[05]	[22]	[12.5]			
4	[03]	[01]	[5.75]			
5	[09]	[02]	[0.0]			
6	[02]	[86]	[0.1]			
7	[01]	[01]	[2.0]			
8	[02]	[86]	[0.1]			
9	[01]	[01]	[3.0]			
10	[__]	[__]	[___]			
11	[__]	[__]	[___]			
12	[__]	[__]	[___]			
13	[__]	[__]	[___]			
14	[__]	[__]	[___]			
15	[__]	[__]	[___]			

NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.
2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

   If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.
3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER K Lemmons EMPLOYER SHRP/EHRA DATE 11/5/91

NO picture

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 4]

PREPARER Klemunes EMPLOYER SHRP/~~FHWA~~ DATE 11/5/91

October 1990

no patching

LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 4]

1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __]

2. DATE PATCHING OPERATIONS COMPLETED [__ __-__ __-__ __]

3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

5. SUMMARY OF PATCHING

	NUMBER	TOTAL AREA (SQ. FT.)
Surface Only	[__ __]	[__ __ __ __]
Surface and partial base replacement	[__ __]	[__ __ __ __]
Full depth	[__ __]	[__ __ __ __]

6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES [__]
   Deflection.... 1 Coring.... 2 Visual..... 3
   Other..... 4 (specify)_____

7. METHOD USED TO FORM PATCH BOUNDARIES [__]
   None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling..... 4
   Other..... 5 (Specify)_____

8. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

9. PATCH MATERIAL [__]
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6
   Other.. 7 (Specify)_____

10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemus EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

NO Level-up

LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 4]

1. DATE LEVEL-UP LAYER APPLIED [__ __-__ __-__ __]

2. PLACEMENT LOCATION OF LEVEL-UP LAYER [__]
   Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4

3. LENGTH OF TEST SECTION COVERED [__]
   Full Length of Test Section 1
   Partial Length of Test Section .... 2 (enter start and end station numbers)
   Outside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __
   Inside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __

4. AVERAGE RUT DIMENSIONS (Inches)

	DEPTH	WIDTH
Outside Wheel Path Rut	[__ . __]	[__ __.__]
Inside Wheel Path Rut	[__ . __]	[__ __.__]

5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP [__]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4
   Wheel Path Milling..... 5 (specify, inches) DEPTH __.__ WIDTH __.__
   Other..... 6 (Specify) _____

6. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

7. TYPE OF LEVEL-UP MATERIAL
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5
   Other... 6 (Specify) _____

8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__ __]

9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

OPEN GRADED

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [04]

1. DATE OF MILLING OPERATION [09-03-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 1000

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]
Outside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [__0]

8. Height of Ridge Between Parallel Passes? (Inches) [__.0]

9. Other Comments? (Yes, No) [NO]
   Comments _____

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [__48]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [NO]
13. LAYER NUMBER OF MILL REPLACEMENT [1]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [__20]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [1]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__ __ . __]

17. COMMENTS _____

PREPARER K BENNETT EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 4]

1. SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLAY [3]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4

2. TACK COAT
   Layer Numbers [0 6] [0 8]
   Material Type None..... 1 SS-1.... 2 SS-1H.... 3 CRS-1.... 4 [0 9]
   CRS-2.... 5 CMS-2.... 6 CMS-2H.. 7 CSS-1.... 8 CSS-1H... 9
   Other.... 10 (Specify) _____

3. TACK COAT DILUTION
   (Percent) [__ __]
   Mixing Rate Parts Diluent ___ TO Parts Asphalt ___

4. TACK COAT APPLICATION RATE (Gal/Sq. Yd.) [0 . 1 __]

5. ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers		
Plant 1	[2]	Boeing 400	[__ __ 9]	[__ 8]	[7]	[9]	
Plant 2	[__]	0	[__ __ __]	[__ __]	[__]	[__]	[__]
Plant 3	[__]	_____	[__ __ __]	[__ __]	[__]	[__]	[__]

   Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify _____

6. MANUFACTURER OF ASPHALT CONCRETE PAVER BLAW-KNOX

7. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER 220 1971

8. SINGLE PASS LAYDOWN WIDTH (Feet) SURFACE [2 2.0]

9. AC BINDER COURSE LIFT

Layer Number	__ __	__ __	[__ __]
Nominal First Lift Placement Thickness (Inches)	__.__	__.__	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

10. AC SURFACE COURSE LIFT

Layer Number	7	9	[__ __]
Nominal First Lift Placement Thickness (Inches)	2.5	3.75	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

11. SURFACE FRICTION COURSE
    Layer Number [__ __]
    Nominal Placement Thickness (Inches) [__.__]

12. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [__ + __ __]
    Surface Course [__ + __ __]
    Surface Friction Course [__ + __ __]

13. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2 (specify offset from O/S feet) [__ __.__]

14. SIGNIFICANT EVENTS DURING CONSTRUCTION(disruptions, rain, equip. problems, etc.)

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [04]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-10-91]
2. DATE PAVING OPERATIONS COMPLETED [9-11-91]
3. LAYER NUMBER Bottom [1]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 261
   - Minimum..... 249
   - Standard Deviation... ___.__
   - Number of Tests ..... 3.
   - Maximum..... 273.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem					
7	B	Steel-Whl Tandem					
8	C	Steel-Whl Tandem					
9	D	Steel-Whl Tandem					
10	E	Pneumatic-Tired					
11	F	Pneumatic-Tired					
12	G	Pneumatic-Tired					
13	H	Pneumatic-Tired					
14	I	Single-Drum Vibr.					
15	J	Single-Drum Vibr.					
16	K	Single-Drum Vibr.					
17	L	Single-Drum Vibr.					
18	M	Double-Drum Vibr.	15.0				Both 2.5mph-VIB 3.5mph-STA
19	N	Double-Drum Vibr.	10.0				
20	O	Double-Drum Vibr.					
21	P	Double-Drum Vibr.					
22	Q	Other					

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M			
24	Coverages	2.			
	INTERMEDIATE				
25	Roller Code (A-Q)				
26	Coverages				
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N			
28	Coverages	2.			
29	Air Temperature (°F)				
30	Compacted Thickness (In)				
31	Curing Period (Days)				

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE Nov 5, 1991

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [0905] * TEST SECTION NO. [04]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-11-91]
2. DATE PAVING OPERATIONS COMPLETED [9-11-91]
3. LAYER NUMBER SURFACE [9]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 268.
   - Minimum..... 265.
   - Standard Deviation... ___.__
   - Number of Tests ..... 3.
   - Maximum..... 270.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem					
7	B	Steel-Whl Tandem					
8	C	Steel-Whl Tandem					
9	D	Steel-Whl Tandem					
10	E	Pneumatic-Tired					
11	F	Pneumatic-Tired					
12	G	Pneumatic-Tired					
13	H	Pneumatic-Tired					
14	I	Single-Drum Vibr.					
15	J	Single-Drum Vibr.					
16	K	Single-Drum Vibr.					
17	L	Single-Drum Vibr.					
18	M	Double-Drum Vibr.	15.0				Both 2.5mph-Vib 3.5mph-Sta
19	N	Double-Drum Vibr.	10.0				
20	O	Double-Drum Vibr.					
21	P	Double-Drum Vibr.					
22	Q	Other					

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M			
24	Coverages	2.			
	INTERMEDIATE				
25	Roller Code (A-Q)				
26	Coverages				
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N			
28	Coverages	2.			
29	Air Temperature (°F)				
30	Compacted Thickness (In)				
31	Curing Period (Days)				

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [04]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C)[1]			A	A	
Rod Depth (Inches)			00	00	
Number of Measurements			02	02	
Average (pcf)			148.5	148.9	
Maximum (pcf)			149.0	149.1	
Minimum (pcf)			147.9	148.6	TESTER NOTED these two measurements as 1ST LIFT which is NOT the CASE
Standard Deviation (pcf)					
Layer Number			07	09	

[1]Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACURER OF NUCLEAR DENSITY GAUGE Troxler

3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3440

4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 16505

5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3556

6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2 —
Profile Index (Inches/Mile) — —
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3 —
Height of Blanking Band (Inches) —.— —
Cutoff Height (Inches) —.— —

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) NO

PREPARER Klemmas EMPLOYER SHRP/FHWA DATE Nov 5, 1991

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [04]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
0+00	0	— — . —	— — . —	— — . —	4.0	— — . —
	38	— — . —	— — . —	— — . —	4.4	— — . —
	79	— — . —	— — . —	— — . —	4.3	— — . —
	114	— — . —	— — . —	— — . —	4.8	— — . —
	151	— — . —	— — . —	— — . —	4.3	— — . —
0+50	0	— — . —	— — . —	— — . —	4.0	— — . —
	37	— — . —	— — . —	— — . —	4.8	— — . —
	82	— — . —	— — . —	— — . —	4.4	— — . —
	113	— — . —	— — . —	— — . —	4.8	— — . —
	157	— — . —	— — . —	— — . —	4.4	— — . —
1+00	0	— — . —	— — . —	— — . —	4.1	— — . —
	37	— — . —	— — . —	— — . —	4.8	— — . —
	78	— — . —	— — . —	— — . —	4.7	— — . —
	114	— — . —	— — . —	— — . —	5.0	— — . —
	150	— — . —	— — . —	— — . —	4.7	— — . —
1+50	0	— — . —	— — . —	— — . —	4.2	— — . —
	35	— — . —	— — . —	— — . —	5.0	— — . —
	71	— — . —	— — . —	— — . —	4.7	— — . —
	111	— — . —	— — . —	— — . —	5.0	— — . —
	149	— — . —	— — . —	— — . —	4.1	— — . —
2+00	0	— — . —	— — . —	— — . —	4.0	— — . —
	34	— — . —	— — . —	— — . —	4.8	— — . —
	75	— — . —	— — . —	— — . —	4.7	— — . —
	112	— — . —	— — . —	— — . —	4.8	— — . —
	150	— — . —	— — . —	— — . —	4.3	— — . —
2+50	0	— — . —	— — . —	— — . —	4.2	— — . —
	38	— — . —	— — . —	— — . —	4.8	— — . —
	78	— — . —	— — . —	— — . —	4.5	— — . —
	111	— — . —	— — . —	— — . —	4.8	— — . —
	153	— — . —	— — . —	— — . —	4.3	— — . —
3+00	0	— — . —	— — . —	— — . —	3.9	— — . —
	35	— — . —	— — . —	— — . —	4.5	— — . —
	77	— — . —	— — . —	— — . —	4.6	— — . —
	113	— — . —	— — . —	— — . —	4.7	— — . —
	153	— — . —	— — . —	— — . —	4.2	— — . —
LAYER NUMBER		— —	— —	— —	9	— —

PREPARER K Reaves EMPLOYER FHWA/SHRP DATE 1/14/92

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [04]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	0				4.0	
	39				4.6	
	77				4.6	
	111				4.8	
	149				4.5	
4+00	0				4.0	
	33				4.7	
	72				4.6	
	111				4.8	
	149				4.6	
4+50	0				4.0	
	35				4.7	
	74				4.5	
	112				4.8	
	152				4.3	
5+00	0				4.5	
	35				5.0	
	73				4.7	
	110				5.1	
	157				4.7	
_+_ _						
_+_ _						
_+_ _						
LAYER NUMBER						

PREPARER K Bowers EMPLOYER FHWA/SHRP DATE 1/14/92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [04]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod and level surveys were completed before and after construction. NO measurements were taken between lifts.

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 1/4/90

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 5]

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE CLASS	4. LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[6 2]				
2	[0 6]	[6 2]	[_15.1]	_ _ _._	_ _ _._	_ _ _._
3	[0 5]	[2 2]	[_ 2.75]	_ _ _._	_ _ _._	_ _ _._
4	[0 3]	[0 1]	[_ 5.25]	_ _ _._	_ _ _._	_ _ _._
5	[0 9]	[0 2]	[_ 0.0]	_ _ _._	_ _ _._	_ _ _._
6	[0 2]	[8 6]	[_ 0.1]	_ _ _._	_ _ _._	_ _ _._
7	[0 1]	[0 1]	[_ 2.0]	_ _ _._	_ _ _._	_ _ _._
8	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
9	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
10	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
11	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
12	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
13	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
14	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
15	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._

NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.
2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

   If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.
3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER JOHN A Kennedy EMPLOYER SHRP/FHWA DATE NOV 5, 1991

October 1990

NOT REQ'D

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE [__ __] * SPS PROJECT CODE [__ __] * TEST SECTION NO. [__ __]

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

No Patching

LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [__ __] * SPS PROJECT CODE [__ __] * TEST SECTION NO. [__ __]

1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __]

2. DATE PATCHING OPERATIONS COMPLETED [__ __-__ __-__ __]

3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

5. SUMMARY OF PATCHING

	NUMBER	TOTAL AREA (SQ. FT.)
Surface Only	[__ __]	[__ __ __ __]
Surface and partial base replacement	[__ __]	[__ __ __ __]
Full depth	[__ __]	[__ __ __ __]

6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES [__]
   Deflection.... 1 Coring.... 2 Visual..... 3
   Other..... 4 (specify)_____

7. METHOD USED TO FORM PATCH BOUNDARIES [__]
   None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling..... 4
   Other..... 5 (Specify)_____

8. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

9. PATCH MATERIAL [__]
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6
   Other.. 7 (Specify)_____

10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

N/o Level up

LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [__ __] * SPS PROJECT CODE [__ __] * TEST SECTION NO. [__ __]

1. DATE LEVEL-UP LAYER APPLIED [__ __-__ __-__ __]

2. PLACEMENT LOCATION OF LEVEL-UP LAYER [__]
   Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4

3. LENGTH OF TEST SECTION COVERED [__]
   Full Length of Test Section 1
   Partial Length of Test Section .... 2 (enter start and end station numbers)
   Outside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __
   Inside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __

4. AVERAGE RUT DIMENSIONS (Inches)

	DEPTH	WIDTH
Outside Wheel Path Rut	[__ . __]	[__ __.__]
Inside Wheel Path Rut	[__ . __]	[__ __.__]

5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP [__]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4
   Wheel Path Milling..... 5 (specify, inches) DEPTH __.__ WIDTH __.__
   Other..... 6 (Specify) _____

6. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

7. TYPE OF LEVEL-UP MATERIAL
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5
   Other... 6 (Specify) _____

8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__ __]

9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

OPEN GRADED

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [05]

1. DATE OF MILLING OPERATION [09-03-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 1000

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]
Outside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [__0]

8. Height of Ridge Between Parallel Passes? (Inches) [__.0]

9. Other Comments? (Yes, No) [NO]
   Comments _____

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [__48]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [__NA]
13. LAYER NUMBER OF MILL REPLACEMENT [2]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [__.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [1]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__ __.__]

17. COMMENTS _____

PREPARER JOHN Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [05]

1. SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLAY [3]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4

2. TACK COAT
   Layer Numbers [__ __] [06]
   Material Type None..... 1 SS-1.... 2 SS-1H.... 3 CRS-1.... 4 [02]
   CRS-2.... 5 CMS-2.... 6 CMS-2H.. 7 CSS-1.... 8 CSS-1H... 9
   Other.... 10 (Specify) _____

3. TACK COAT DILUTION
   (Percent) [__ __]
   Mixing Rate Parts Diluent ___ TO Parts Asphalt ___

4. TACK COAT APPLICATION RATE (Gal/Sq. Yd.) [0.1 __]

5. ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers		
Plant 1	[2]	Boeing 400 coal	[__ __ 4]	[__ 8]	[7]	[__]	[__]
Plant 2	[__]	_____	[__ __ __]	[__ __]	[__]	[__]	[__]
Plant 3	[__]	_____	[__ __ __]	[__ __]	[__]	[__]	[__]

   Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify_____

6. MANUFACTURER OF ASPHALT CONCRETE PAVER Blaw-Knox

7. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER 220 1971

8. SINGLE PASS LAYDOWN WIDTH (Feet) [22.0]

9. AC BINDER COURSE LIFT
   Layer Number [__ __] [__ __] [__ __]
   Nominal First Lift Placement Thickness (Inches) [__.__] [__.__] [__.__]
   Nominal Second Lift Placement Thickness (Inches) [__.__] [__.__] [__.__]

10. AC SURFACE COURSE LIFT
    Layer Number [__ 7] [__ __] [__ __]
    Nominal First Lift Placement Thickness (Inches) [2.5] [__.__] [__.__]
    Nominal Second Lift Placement Thickness (Inches) [__.__] [__.__] [__.__]

11. SURFACE FRICTION COURSE
    Layer Number [__ __]
    Nominal Placement Thickness (Inches) [__.__]

12. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [__ + __ __]
    Surface Course [__ + __ __]
    Surface Friction Course [__ + __ __]

13. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2 (specify offset from O/S feet) [__ __.__]

14. SIGNIFICANT EVENTS DURING CONSTRUCTION(disruptions, rain, equip. problems, etc.)

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA
OVERLAY COMPACTION DATA
CONSTRUCTION DATA SHEET 8

* STATE CODE [3 0]
* SPS PROJECT CODE [0 5]
* TEST SECTION NO. [0 5]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [0 9 - 1 1 - 9 1]
2. DATE PAVING OPERATIONS COMPLETED [0 9 - 1 1 - 9 1]

3. LAYER NUMBER [1]

4. MIXING TEMPERATURE (°F) [2 9 5]

5. LAYDOWN TEMPERATURES (°F)
   Mean..... 2 7 2
   Minimum..... 2 6 7
   Standard Deviation... — — . —
   Number of Tests 3
   Maximum..... 2 7 5

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	— — . —				
7	B	Steel-Whl Tandem	— — . —				
8	C	Steel-Whl Tandem	— — . —				
9	D	Steel-Whl Tandem	— — . —				
10	E	Pneumatic-Tired	— — . —				
11	F	Pneumatic-Tired	— — . —	— — — —			
12	G	Pneumatic-Tired	— — . —	— — — —			
13	H	Pneumatic-Tired	— — . —	— — — —			
14	I	Single-Drum Vibr.	— — . —				
15	J	Single-Drum Vibr.	— — . —				
16	K	Single-Drum Vibr.	— — . —				
17	L	Single-Drum Vibr.	— — . —				
18	M	Double-Drum Vibr.	1 5 . 0				
19	N	Double-Drum Vibr.	1 0 . 0				
20	O	Double-Drum Vibr.	— — . —				
21	P	Double-Drum Vibr.	— — . —				
22	Q	Other					

Both
2.5mph-VIB
3.5mph-STAT

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M	—	—	—
24	Coverages	— 2 .	— — .	— — .	— — .
	INTERMEDIATE				
25	Roller Code (A-Q)	—	—	—	—
26	Coverages	— — .	— — .	— — .	— — .
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N	—	—	—
28	Coverages	— 2 .	— — .	— — .	— — .
29	Air Temperature (°F)	— 7 5	— — —	— — —	— — —
30	Compacted Thickness (In)	— —	— —	— —	— —
31	Curing Period (Days)	— — . —	— — . —	— — . —	— — . —

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [05]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C)[1]				A	
Rod Depth (Inches)				00	
Number of Measurements				08	
Average (pcf)				148.1	
Maximum (pcf)				149.4	
Minimum (pcf)				146.8	
Standard Deviation (pcf)					
Layer Number				07	

[1]Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACURER OF NUCLEAR DENSITY GAUGE Troxler

3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3440

4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 16505

5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3556

6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2	
Profile Index (Inches/Mile)	
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3	
Height of Blanking Band (Inches)	
Cutoff Height (Inches)	

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) No

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [0]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
0+00	0 3 7 7 5 14 15 0	— — . —	— — . —	— — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —
0+50	0 3 7 8 3 16 15 0	— — . —	— — . —	— — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —
1+00	0 3 7 8 0 14 15 2	— — . —	— — . —	— — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —
1+50	0 3 7 9 0 15 15 1	— — . —	— — . —	— — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —
2+00	0 3 7 7 7 14 15 1	— — . —	— — . —	— — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —
2+50	0 4 9 8 1 17 15 1	— — . —	— — . —	— — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —
3+00	0 3 7 8 5 14 15 0	— — . —	— — . —	— — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —
LAYER NUMBER		— —	— —	— —	— 1	— —

PREPARER K. Lemmons EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [0]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	0 4 8 12 16				8.2 8.2 8.2 8.2 8.2	
4+00	0 4 8 12 16				8.2 8.2 8.2 8.2 8.3	
4+50	0 4 8 12 16				8.2 8.2 8.2 8.2 8.2	
5+06	0 4 8 12 16				8.2 8.2 8.2 8.2 8.2	
_+_ _						
_+_ _						
_+_ _						
LAYER NUMBER					7	

PREPARER K Remines EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [05]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod and level surveys were done before and after construction. No measurements were taken between lifts.

PREPARER John Klemmes EMPLOYER SHRP/FHWA DATE 1/14/92

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [06]

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE CLASS	4. LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[62]				
2	[06]	[62]	[15.1]	---.-	---.-	---.-
3	[05]	[22]	[02.75]	---.-	---.-	---.-
4	[03]	[01]	[03.25]	---.-	---.-	---.-
5	[09]	[02]	[00.0]	---.-	---.-	---.-
6	[02]	[86]	[00.1]	---.-	---.-	---.-
7	[01]	[01]	[02.0]	---.-	---.-	---.-
8	[02]	[86]	[00.1]	---.-	---.-	---.-
9	[01]	[01]	[03.0]	---.-	---.-	---.-
10	[__ __]	[__ __]	[_ _ _.-]	---.-	---.-	---.-
11	[__ __]	[__ __]	[_ _ _.-]	---.-	---.-	---.-
12	[__ __]	[__ __]	[_ _ _.-]	---.-	---.-	---.-
13	[__ __]	[__ __]	[_ _ _.-]	---.-	---.-	---.-
14	[__ __]	[__ __]	[_ _ _.-]	---.-	---.-	---.-
15	[__ __]	[__ __]	[_ _ _.-]	---.-	---.-	---.-

NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.
2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

   If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.
3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER John A Kbmunes EMPLOYER SHRP/FHWA DATE 11/5/91

NO picture Req'd

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE [__ __] * SPS PROJECT CODE [__ __] * TEST SECTION NO. [__ __]

PREPARER Klamunes EMPLOYER SHRP/FHWA DATE 11/5/91

NO PATCHING

LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [__ __] * SPS PROJECT CODE [__ __] * TEST SECTION NO. [__ __]

1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __]

2. DATE PATCHING OPERATIONS COMPLETED [__ __-__ __-__ __]

3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

5. SUMMARY OF PATCHING

	NUMBER	TOTAL AREA (SQ. FT.)
Surface Only	[__ __]	[__ __ __ __]
Surface and partial base replacement	[__ __]	[__ __ __ __]
Full depth	[__ __]	[__ __ __ __]

6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES [__]
   Deflection.... 1 Coring.... 2 Visual..... 3
   Other..... 4 (specify)_____

7. METHOD USED TO FORM PATCH BOUNDARIES [__]
   None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling..... 4
   Other..... 5 (Specify)_____

8. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

9. PATCH MATERIAL [__]
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6
   Other.. 7 (Specify)_____

10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

NO LEVEL UP

LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [__ __] * SPS PROJECT CODE [__ __] * TEST SECTION NO. [__ __]

1. DATE LEVEL-UP LAYER APPLIED [__ __-__ __-__ __]

2. PLACEMENT LOCATION OF LEVEL-UP LAYER [__]
   Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4

3. LENGTH OF TEST SECTION COVERED [__]
   Full Length of Test Section 1
   Partial Length of Test Section .... 2 (enter start and end station numbers)
   Outside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __
   Inside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __

4. AVERAGE RUT DIMENSIONS (Inches)

	DEPTH	WIDTH
Outside Wheel Path Rut	[__ . __]	[__ __.__]
Inside Wheel Path Rut	[__ . __]	[__ __.__]

5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP [__]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4
   Wheel Path Milling..... 5 (specify, inches) DEPTH __.__ WIDTH __.__
   Other..... 6 (Specify) _____

6. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

7. TYPE OF LEVEL-UP MATERIAL
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5
   Other... 6 (Specify) _____

8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__ __]

9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

OPEN GRADED

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [06]

1. DATE OF MILLING OPERATION [09-03-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 1000

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	__.	__.__	__.__	__.__	[.96]
Outside lane edge	__.	__.__	__.__	__.__	[.96]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [0]

8. Height of Ridge Between Parallel Passes? (Inches) [.0]

9. Other Comments? (Yes, No) [NO]
   Comments _____

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [48]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [N/A]
13. LAYER NUMBER OF MILL REPLACEMENT [2]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [0.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [1]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__.__]

17. COMMENTS _____

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 6]

1. DATE OF MILLING OPERATION [09-06-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 750

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	11.	2.5	2.0	__.__	[2.1]
Outside lane edge	11.	2.5	2.0	__.__	[2.1]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [__0]

8. Height of Ridge Between Parallel Passes? (Inches) [__.0]

9. Other Comments? (Yes, No) [YES]
   Comments Passing Lane had about 10% Delamination at about ¼" Thickness with some very near 0

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [__0]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [NO]
13. LAYER NUMBER OF MILL REPLACEMENT [1]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [__2.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [1]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__.__]

17. COMMENTS _____

PREPARER P Prather EMPLOYER Nichols DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [06]

1. SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLAY [3]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4

2. TACK COAT
   Layer Numbers [06] [08]
   Material Type None..... 1 SS-1.... 2 SS-1H.... 3 CRS-1.... 4 [02]
   CRS-2.... 5 CMS-2.... 6 CMS-2H.. 7 CSS-1.... 8 CSS-1H... 9
   Other.... 10 (Specify) _____

3. TACK COAT DILUTION
   (Percent) [__ __]
   Mixing Rate Parts Diluent ___ TO Parts Asphalt ___

4. TACK COAT APPLICATION RATE (Gal/Sq. Yd.) [0.1 __]

5. ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers
Plant 1	[2]	Boeing 400 COAL Fixed	[__ __ 4]	[__ 8]	[7] [9] [__]
Plant 2	[__]	_____	[__ __ __]	[__ __]	[__] [__] [__]
Plant 3	[__]	_____	[__ __ __]	[__ __]	[__] [__] [__]

   Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify _____

6. MANUFACTURER OF ASPHALT CONCRETE PAVER Blaw-Knox

7. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER 220 1971

8. SINGLE PASS LAYDOWN WIDTH (Feet)
   SURFACE [22.0]
   TRENCH [12.5]

9. AC BINDER COURSE LIFT

Layer Number	__ __	__ __	[__ __]
Nominal First Lift Placement Thickness (Inches)	__.__	__.__	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

10. AC SURFACE COURSE LIFT

Layer Number	7	9	[__ __]
Nominal First Lift Placement Thickness (Inches)	2.5	3.75	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

11. SURFACE FRICTION COURSE
    Layer Number [__ __]
    Nominal Placement Thickness (Inches) [__.__]

12. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [__ + __ __]
    Surface Course [__ + __ __]
    Surface Friction Course [__ + __ __]

13. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2 (specify offset from O/S feet) [__ __.__]

14. SIGNIFICANT EVENTS DURING CONSTRUCTION(disruptions, rain, equip. problems, etc.)
    Sept 7, Paving was ceased 9 FT into the trench replacement of section 300507

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [04]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [09-07-91]
2. DATE PAVING OPERATIONS COMPLETED [09-11-91]
3. LAYER NUMBER Trench Layer [7]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 245.
   - Minimum..... 232.
   - Standard Deviation... ___.__
   - Number of Tests ..... 2.
   - Maximum..... 252.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem					
7	B	Steel-Whl Tandem					
8	C	Steel-Whl Tandem	___.__				
9	D	Steel-Whl Tandem	___.__				
10	E	Pneumatic-Tired	___.__	____.			
11	F	Pneumatic-Tired	___.__	____.			
12	G	Pneumatic-Tired	___.__	____.			
13	H	Pneumatic-Tired	___.__				
14	I	Single-Drum Vibr.	___.__		____.	___	___.__
15	J	Single-Drum Vibr.	___.__		____.	___	___.__
16	K	Single-Drum Vibr.	___.__		____.	___	___.__
17	L	Single-Drum Vibr.	___.__		____.	___	___.__
18	M	Double-Drum Vibr.	15.0		____.	___	___.__
19	N	Double-Drum Vibr.	10.0		____.	___	___.__
20	O	Double-Drum Vibr.	___.__		____.	___	___.__
21	P	Double-Drum Vibr.	___.__		____.	___	___.__
22	Q	Other					

High 255
1 212

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 Vib. 1 Stat.			
23	Roller Code (A-Q)	M	___	___	___
24	Coverages	2.	___.	___.	___.
	INTERMEDIATE				
25	Roller Code (A-Q)	___	___	___	___
26	Coverages	___.	___.	___.	___.
	FINAL	1 Vib. 1 Static			
27	Roller Code (A-Q)	N	___	___	___
28	Coverages	2.	___.	___.	___.
29	Air Temperature (°F)	70.	___.	___.	___.
30	Compacted Thickness (In)	___.__	___.__	___.__	___.__
31	Curing Period (Days)	___.__	___.__	___.__	___.__

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [32] * SPS PROJECT CODE [025] * TEST SECTION NO. [026]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-10-91]
2. DATE PAVING OPERATIONS COMPLETED [9-11-91]
3. LAYER NUMBER — SURFACE COARSE [9]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 257.
   - Minimum..... 259.
   - Standard Deviation... ___.__
   - Number of Tests ..... 9.
   - Maximum..... 262.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	___.__	[redacted]	[redacted]	[redacted]	[redacted]
7	B	Steel-Whl Tandem	___.__				
8	C	Steel-Whl Tandem	___.__				
9	D	Steel-Whl Tandem	___.__				
10	E	Pneumatic-Tired	___.__	____.			
11	F	Pneumatic-Tired	___.__	____.			
12	G	Pneumatic-Tired	___.__	____.			
13	H	Pneumatic-Tired	___.__	____.			
14	I	Single-Drum Vibr.	___.__	[redacted]	____.	____.	____.
15	J	Single-Drum Vibr.	___.__		____.	____.	____.
16	K	Single-Drum Vibr.	___.__		____.	____.	____.
17	L	Single-Drum Vibr.	___.__		____.	____.	____.
18	M	Double-Drum Vibr.	150.		____.	____.	____.
19	N	Double-Drum Vibr.	100.		____.	____.	____.
20	O	Double-Drum Vibr.	___.__		____.	____.	____.
21	P	Double-Drum Vibr.	___.__		____.	____.	____.
22	Q	Other					

2.5/3.5 mph

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR			
23	Roller Code (A-Q)	1 STAT			
24	Coverages	M 2.	___ ___.	___ ___.	___ ___.
	INTERMEDIATE				
25	Roller Code (A-Q)				
26	Coverages	___ ___.	___ ___.	___ ___.	___ ___.
	FINAL	1 VIBR			
27	Roller Code (A-Q)	1 STAT			
28	Coverages	N 2.	___ ___.	___ ___.	___ ___.
29	Air Temperature (°F)	75.	___.___	___.___	___.___
30	Compacted Thickness (In)	___.__	___.___	___.___	___.___
31	Curing Period (Days)	___.__	___.___	___.___	___.___

PREPARER K Simmons EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [06]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C)[1]		A		A	
Rod Depth (Inches)		00		00	
Number of Measurements		02		02	
Average (pcf)		148.9		150.0	
Maximum (pcf)		150.8		150.0	
Minimum (pcf)		146.9		149.9	
Standard Deviation (pcf)					
Layer Number		07		09	

[1]Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACURER OF NUCLEAR DENSITY GAUGE TROXLER

3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3440

4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 16505

5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3556

6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2 _
Profile Index (Inches/Mile) __
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3 _
Height of Blanking Band (Inches) __.__
Cutoff Height (Inches) __.__

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) NO

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [06]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
0+00	0 3 7 10 12	— — . —	— — . —	— — . —	9.6 9.2 9.2 9.2 9.7	— — . —
0+50	0 3 8 1 1	— — . —	— — . —	— — . —	9.9 9.8 9.8 9.8 9.4	— — . —
1+00	0 3 5 13 1	— — . —	— — . —	— — . —	9.7 9.9 9.8 9.8 9.5	— — . —
1+50	0 3 9 5 0	— — . —	— — . —	— — . —	9.5 9.9 9.7 9.7 9.4	— — . —
2+00	0 5 7 14 1	— — . —	— — . —	— — . —	9.8 9.9 9.9 9.9 10.0	— — . —
2+50	0 8 6 14 0	— — . —	— — . —	— — . —	9.9 9.9 9.9 9.9 9.7	— — . —
3+00	0 6 9 13 0	— — . —	— — . —	— — . —	9.7 9.9 9.8 9.8 9.3	— — . —
LAYER NUMBER		— —	— —	— —	— 9	— —

PREPARER K Emmons EMPLOYER SHSP/FHWA DATE 1-14-90

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [06]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	0 3 7 14 20				2.6 2.5 2.4 2.2 2.0	
4+00	0 3 7 15 20				2.0 2.0 1.9 1.9 1.9	
4+50	0 3 8 14 19				2.0 1.9 1.9 1.9 1.9	
5+00	0 3 8 15 19				1.7 1.9 1.9 1.9 1.7	
_+_ _						
_+_ _						
_+_ _						
LAYER NUMBER					9	

PREPARER K Emmons EMPLOYER SHRP/FHWA DATE 1-19-90

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [06]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod and Level Surveys were completed before and after construction. No measurements were taken between lifts.

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 1/4/92

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [07]

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE CLASS	4. LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[62]				
2	[06]	[62]	[_15.1]	_ _ _._	_ _ _._	_ _ _._
3	[05]	[22]	[_ _2.75]	_ _ _._	_ _ _._	_ _ _._
4	[03]	[01]	[_ _3.25]	_ _ _._	_ _ _._	_ _ _._
5	[09]	[02]	[_ _0.0]	_ _ _._	_ _ _._	_ _ _._
6	[02]	[86]	[_ _0.1]	_ _ _._	_ _ _._	_ _ _._
7	[01]	[01]	[_ _2.0]	_ _ _._	_ _ _._	_ _ _._
8	[02]	[86]	[_ _0.1]	_ _ _._	_ _ _._	_ _ _._
9	[01]	[01]	[_ _2.0]	_ _ _._	_ _ _._	_ _ _._
10	[02]	[86]	[_ _0.1]	_ _ _._	_ _ _._	_ _ _._
11	[01]	[01]	[_ _3.0]	_ _ _._	_ _ _._	_ _ _._
12	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
13	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
14	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
15	[__ __]	[__ __]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._

NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.
2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09	
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10	
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11	
HMAC Layer (Subsurface).04	Interlayer.....08		

   If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.
3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER J. Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

NO Req'd

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 7]

PREPARER John Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

OPEN GRADED

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [07]

1. DATE OF MILLING OPERATION [09-03-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 1000

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	__.	__.__	__.__	__.__	[.96]
Outside lane edge	__.	__.__	__.__	__.__	[.96]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [0]

8. Height of Ridge Between Parallel Passes? (Inches) [.0]

9. Other Comments? (Yes, No) [NO]
   Comments _____

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [48]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [NA]
13. LAYER NUMBER OF MILL REPLACEMENT [9]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [0.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [1]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__.__]

17. COMMENTS _____

PREPARER Klemures EMPLOYER SHRP/FHWA DATE 11/5/91

NO LEVEL-UP

LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 7]

1. DATE LEVEL-UP LAYER APPLIED [__ __-__ __-__ __]

2. PLACEMENT LOCATION OF LEVEL-UP LAYER [__]
   Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4

3. LENGTH OF TEST SECTION COVERED [__]
   Full Length of Test Section 1
   Partial Length of Test Section .... 2 (enter start and end station numbers)
   Outside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __
   Inside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __

4. AVERAGE RUT DIMENSIONS (Inches)

	DEPTH	WIDTH
Outside Wheel Path Rut	[__ . __]	[__ __.__]
Inside Wheel Path Rut	[__ . __]	[__ __.__]

5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP [__]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4
   Wheel Path Milling..... 5 (specify, inches) DEPTH __.__ WIDTH __.__
   Other..... 6 (Specify) _____

6. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

7. TYPE OF LEVEL-UP MATERIAL
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5
   Other... 6 (Specify) _____

8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__ __]

9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemures EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

NO PATCHING

LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 7]

1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __]

2. DATE PATCHING OPERATIONS COMPLETED [__ __-__ __-__ __]

3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

5. SUMMARY OF PATCHING

	NUMBER	TOTAL AREA (SQ. FT.)
Surface Only	[__ __]	[__ __ __ __]
Surface and partial base replacement	[__ __]	[__ __ __ __]
Full depth	[__ __]	[__ __ __ __]

6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES [__]
   Deflection.... 1 Coring.... 2 Visual..... 3
   Other..... 4 (specify)_____

7. METHOD USED TO FORM PATCH BOUNDARIES [__]
   None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling..... 4
   Other..... 5 (Specify)_____

8. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

9. PATCH MATERIAL [__]
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6
   Other.. 7 (Specify)_____

10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [07]

1. DATE OF MILLING OPERATION [09-07-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 750

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	16.	2.2	1.9	__.__	[2.0]
Outside lane edge	11.	2.2	2.0	__.__	[2.1]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [__0]

8. Height of Ridge Between Parallel Passes? (Inches) [__.0]

9. Other Comments? (Yes, No) [YES]
   Comments Passing Lane had about 10% Delamination of About 1/4" Thickness with some very near ¢

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [__0__]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [__NO__]
13. LAYER NUMBER OF MILL REPLACEMENT [1]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [__2.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [1]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__ __ . __]

17. COMMENTS _____

PREPARER Klemures EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [3 9] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 7]

1. SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLAY [3]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4

2. TACK COAT
   Layer Numbers [0 6] [0 8] [1 0]
   Material Type None..... 1 SS-1.... 2 SS-1H.... 3 CRS-1.... 4 [0 2]
   CRS-2.... 5 CMS-2.... 6 CMS-2H.. 7 CSS-1.... 8 CSS-1H... 9
   Other.... 10 (Specify) _____

3. TACK COAT DILUTION
   (Percent) [__ __]
   Mixing Rate Parts Diluent ___ TO Parts Asphalt ___

4. TACK COAT APPLICATION RATE (Gal/Sq. Yd.) [0 . 1 __]

5. ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers
Plant 1	[2]	Boeing 400	[__ __ 9]	[__ 8]	[7] [9] [11]
Plant 2	[__]	_____	[__ __ __]	[__ __]	[__] [__] [__]
Plant 3	[__]	_____	[__ __ __]	[__ __]	[__] [__] [__]

   Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify _____

6. MANUFACTURER OF ASPHALT CONCRETE PAVER Blaw-Knox

7. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER 220 1971

8. SINGLE PASS LAYDOWN WIDTH (Feet) Intermediate SURFACE [2 2.0]
   TRENCH [1 2.5]

9. AC BINDER COURSE LIFT

Layer Number	__ __	__ __	[__ __]
Nominal First Lift Placement Thickness (Inches)	__.__	__.__	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

10. AC SURFACE COURSE LIFT

Layer Number	7	9	[1 1]
Nominal First Lift Placement Thickness (Inches)	2.5	2.5	[3.25]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

11. SURFACE FRICTION COURSE
    Layer Number [__ __]
    Nominal Placement Thickness (Inches) [__.__]

12. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [__ + __ __]
    Surface Course [0 + 0 9]
    Surface Friction Course [__ + __ __]

13. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2 (specify offset from O/S feet) [__ __.__]

14. SIGNIFICANT EVENTS DURING CONSTRUCTION(disruptions, rain, equip. problems, etc.)
    Rain caused work to cease 9 FT into the trench section

PREPARER Hennes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [07]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-10-91]
2. DATE PAVING OPERATIONS COMPLETED [9-11-91]
3. LAYER NUMBER TRENCH [1]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 266.
   - Minimum..... 255.
   - Standard Deviation... ---.-
   - Number of Tests ..... 3.
   - Maximum..... 272.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	---.-				
7	B	Steel-Whl Tandem	---.-				
8	C	Steel-Whl Tandem	---.-				
9	D	Steel-Whl Tandem	---.-				
10	E	Pneumatic-Tired	---.-				
11	F	Pneumatic-Tired	---.-	---.-			
12	G	Pneumatic-Tired	---.-	---.-			
13	H	Pneumatic-Tired	---.-	---.-			
14	I	Single-Drum Vibr.	---.-				
15	J	Single-Drum Vibr.	---.-		---.-	---.-	---.-
16	K	Single-Drum Vibr.	---.-		---.-	---.-	---.-
17	L	Single-Drum Vibr.	---.-		---.-	---.-	---.-
18	M	Double-Drum Vibr.	15.0		---.-	---.-	---.-
19	N	Double-Drum Vibr.	10.0		---.-	---.-	---.-
20	O	Double-Drum Vibr.	---.-		---.-	---.-	---.-
21	P	Double-Drum Vibr.	---.-		---.-	---.-	---.-
22	Q	Other					

Both 2.5mph-VI. 3.5mph-ST.

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M	---	---	---
24	Coverages	2.	---.	---.	---.
	INTERMEDIATE				
25	Roller Code (A-Q)	---	---	---	---
26	Coverages	---.	---.	---.	---.
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N	---	---	---
28	Coverages	2.	---.	---.	---.
29	Air Temperature (°F)	60.	---.	---.	---.
30	Compacted Thickness (In)	2.75	---	---	---
31	Curing Period (Days)	---	---.	---.	---.

PREPARER Klemanes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [07]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-10-91]
2. DATE PAVING OPERATIONS COMPLETED [9-11-91]
3. LAYER NUMBER Inter. [2]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 263.
   - Minimum..... 259.
   - Standard Deviation... ---
   - Number of Tests ..... 3.
   - Maximum..... 268.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	---				
7	B	Steel-Whl Tandem	---				
8	C	Steel-Whl Tandem	---				
9	D	Steel-Whl Tandem	---				
10	E	Pneumatic-Tired	---	---			
11	F	Pneumatic-Tired	---	---			
12	G	Pneumatic-Tired	---	---			
13	H	Pneumatic-Tired	---	---			
14	I	Single-Drum Vibr.	---		---	---	---
15	J	Single-Drum Vibr.	---		---	---	---
16	K	Single-Drum Vibr.	---		---	---	---
17	L	Single-Drum Vibr.	---		---	---	---
18	M	Double-Drum Vibr.	15.0		---	---	---
19	N	Double-Drum Vibr.	10.0		---	---	---
20	O	Double-Drum Vibr.	---		---	---	---
21	P	Double-Drum Vibr.	---		---	---	---
22	Q	Other					

Both 2.5mph-VIB 3.5mph-STA

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M	---	---	---
24	Coverages	2.	---	---	---
	INTERMEDIATE				
25	Roller Code (A-Q)	---	---	---	---
26	Coverages	---	---	---	---
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N	---	---	---
28	Coverages	2.	---	---	---
29	Air Temperature (°F)	---	---	---	---
30	Compacted Thickness (In)	---	---	---	---
31	Curing Period (Days)	---	---	---	---

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [07]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-11-91]
2. DATE PAVING OPERATIONS COMPLETED [9-11-91]
3. LAYER NUMBER SURFACE [II]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 268.
   - Minimum..... 261.
   - Standard Deviation... ---
   - Number of Tests ..... 3.
   - Maximum..... 270.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	---				---
7	B	Steel-Whl Tandem	---				---
8	C	Steel-Whl Tandem	---				---
9	D	Steel-Whl Tandem	---				---
10	E	Pneumatic-Tired	---	---			
11	F	Pneumatic-Tired	---	---			
12	G	Pneumatic-Tired	---	---			
13	H	Pneumatic-Tired	---	---			
14	I	Single-Drum Vibr.	---		---	---	---
15	J	Single-Drum Vibr.	---		---	---	---
16	K	Single-Drum Vibr.	---		---	---	---
17	L	Single-Drum Vibr.	---		---	---	---
18	M	Double-Drum Vibr.	150.		---	---	---
19	N	Double-Drum Vibr.	100.		---	---	---
20	O	Double-Drum Vibr.	---		---	---	---
21	P	Double-Drum Vibr.	---		---	---	---
22	Q	Other					

Both 2.5mph-VIB 3.5mph-STA

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M	---	---	---
24	Coverages	2.	---	---	---
	INTERMEDIATE				
25	Roller Code (A-Q)	---	---	---	---
26	Coverages	---	---	---	---
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N	---	---	---
28	Coverages	2.	---	---	---
29	Air Temperature (°F)	70.	---	---	---
30	Compacted Thickness (In)	---	---	---	---
31	Curing Period (Days)	---	---	---	---

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/6/91

October 1990

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [07]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C)[1]		A	A	A	
Rod Depth (Inches)		00	00	00	
Number of Measurements		02	02	02	
Average (pcf)		148.5	149.2	149.7	
Maximum (pcf)		148.8	149.7	149.9	
Minimum (pcf)		148.2	149.7	149.5	
Standard Deviation (pcf)					
Layer Number		07	09	11	

[1]Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

THESE NORO MEASUREMENTS AS IST LT- WHICH IS NOT THE CASE.

2. MANUFACURER OF NUCLEAR DENSITY GAUGE TROXLER

3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3440

4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 16505

5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3556

6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2 —
Profile Index (Inches/Mile) — —
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3 —
Height of Blanking Band (Inches) —.— —
Cutoff Height (Inches) —.— —

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) NO

PREPARER Klemunes J. EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 7]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
0+00	0 3 7 11 15	.	.	.	4.9 5.0 4.9 5.0 4.7	.
0+50	0 3 7 11 15	.	.	.	4.6 5.0 4.7 4.8 4.3	.
1+00	0 3 7 11 15	.	.	.	4.7 4.9 4.9 4.7 4.1	.
1+50	0 3 7 11 14	.	.	.	4.7 4.9 4.9 4.8 4.3	.
2+00	0 4 7 11 15	.	.	.	4.9 4.9 4.9 4.8 4.3	.
2+50	0 3 8 11 15	.	.	.	4.6 5.0 4.8 5.0 4.3	.
3+00	0 3 8 11 15	.	.	.	4.3 4.9 4.9 4.9 4.2	.
LAYER NUMBER					1 1	

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 7]

LAYER THICKNESS MEASUREMENTS (Inches) SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	0				4.4	
	34				5.0	
	79				4.6	
	111				5.0	
	153				4.3	
4+00	0				4.4	
	36				5.2	
	74				4.8	
	110				5.3	
	151				4.8	
4+50	0				4.0	
	38				4.4	
	75				4.0	
	112				4.4	
	152				3.9	
5+00	0				4.3	
	35				4.8	
	74				4.6	
	112				4.9	
	151				4.3	
__+__						
__+__						
__+__						
LAYER NUMBER						

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [07]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod and Level surveys were completed before and after construction. NO measurements were taken between lifts

PREPARER Klemmes EMPLOYER SHRP/[illegible] DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [08]

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE CLASS	4. LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[62]	[redacted]	[redacted]	[redacted]	[redacted]
2	[06]	[62]	[14.5]	---.-	---.-	---.-
3	[05]	[02]	[1.25]	---.-	---.-	---.-
4	[03]	[01]	[3.75]	---.-	---.-	---.-
5	[09]	[02]	[0.0]	---.-	---.-	---.-
6	[02]	[86]	[0.1]	---.-	---.-	---.-
7	[01]	[13]	[2.0]	---.-	---.-	---.-
8	[02]	[86]	[0.1]	---.-	---.-	---.-
9	[01]	[13]	[2.0]	---.-	---.-	---.-
10	[02]	[86]	[0.1]	---.-	---.-	---.-
11	[01]	[13]	[3.0]	---.-	---.-	---.-
12	[__]	[__]	[---.-]	---.-	---.-	---.-
13	[__]	[__]	[---.-]	---.-	---.-	---.-
14	[__]	[__]	[---.-]	---.-	---.-	---.-
15	[__]	[__]	[---.-]	---.-	---.-	---.-

NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.
2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

   If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.
3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER Klemmus EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

no picture

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [08]

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11/5/91

NO patching

LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 8]

1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __]

2. DATE PATCHING OPERATIONS COMPLETED [__ __-__ __-__ __]

3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

5. SUMMARY OF PATCHING

	NUMBER	TOTAL AREA (SQ. FT.)
Surface Only	[__ __]	[__ __ __ __]
Surface and partial base replacement	[__ __]	[__ __ __ __]
Full depth	[__ __]	[__ __ __ __]

6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES [__]
   Deflection.... 1 Coring.... 2 Visual..... 3
   Other..... 4 (specify)_____

7. METHOD USED TO FORM PATCH BOUNDARIES [__]
   None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling..... 4
   Other..... 5 (Specify)_____

8. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

9. PATCH MATERIAL [__]
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6
   Other.. 7 (Specify)_____

10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

October 1990

NO Level-up

LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 8]

1. DATE LEVEL-UP LAYER APPLIED [__ __-__ __-__ __]

2. PLACEMENT LOCATION OF LEVEL-UP LAYER [__]
   Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4

3. LENGTH OF TEST SECTION COVERED [__]
   Full Length of Test Section 1
   Partial Length of Test Section .... 2 (enter start and end station numbers)
   Outside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __
   Inside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __

4. AVERAGE RUT DIMENSIONS (Inches)

	DEPTH	WIDTH
Outside Wheel Path Rut	[__ . __]	[__ __.__]
Inside Wheel Path Rut	[__ . __]	[__ __.__]

5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP [__]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4
   Wheel Path Milling..... 5 (specify, inches) DEPTH __.__ WIDTH __.__
   Other..... 6 (Specify) _____

6. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

7. TYPE OF LEVEL-UP MATERIAL
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5
   Other... 6 (Specify) _____

8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__ __]

9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemuns EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [08]

1. DATE OF MILLING OPERATION [09-07-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 750

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	11.	2.2	2.0	--.-	[2.0]
Outside lane edge	11.	2.2	2.0	--.-	[2.1]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [0]

8. Height of Ridge Between Parallel Passes? (Inches) [.0]

9. Other Comments? (Yes, No) [YES]
   Comments Passing LANE had about 10% Delamination of About 1/4" Thickness with some VERY NEAR ¢

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [0]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [NO]
13. LAYER NUMBER OF MILL REPLACEMENT [1]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [2.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [2]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__.__]

17. COMMENTS _____

PREPARER Klemuns EMPLOYER SHRP/FHWA DATE 11/5/91

OPEN GRADED

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [08]

1. DATE OF MILLING OPERATION [09-03-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 1000

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	__.	__.__	__.__	__.__	[__.96]
Outside lane edge	__.	__.__	__.__	__.__	[__.96]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [__0]

8. Height of Ridge Between Parallel Passes? (Inches) [__.0]

9. Other Comments? (Yes, No) [NO]
   Comments _____

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [__48]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [__NA__]
13. LAYER NUMBER OF MILL REPLACEMENT [5]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [__0.__]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [2]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__.__]

17. COMMENTS _____

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30] * SPS PROJECT CODE [025] * TEST SECTION NO. [028]

1. SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLAY [3]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4

2. TACK COAT
   Layer Numbers 06 [08] [10] [02]
   Material Type None..... 1 SS-1.... 2 SS-1H.... 3 CRS-1.... 4
   CRS-2.... 5 CMS-2.... 6 CMS-2H.. 7 CSS-1.... 8 CSS-1H... 9
   Other.... 10 (Specify) _____

3. TACK COAT DILUTION
   (Percent) [__ __]
   Mixing Rate Parts Diluent ___ TO Parts Asphalt ___

4. TACK COAT APPLICATION RATE (Gal/Sq. Yd.) [0.1]

5. ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers
Plant 1	[3]	Boeing 400	[__ 4]	[__ 8]	[7] [9] [11]
Plant 2	[__]	J	[__ __]	[__ __]	[__] [__] [__]
Plant 3	[__]		[__ __]	[__ __]	[__] [__] [__]

   Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify _____

6. MANUFACTURER OF ASPHALT CONCRETE PAVER BLAW-KNOX

7. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER 220 1971

8. SINGLE PASS LAYDOWN WIDTH (Feet) Intermediate, Surface [22.0]
   Trench [12.5]

9. AC BINDER COURSE LIFT

Layer Number	__ __	__ __	[__ __]
Nominal First Lift Placement Thickness (Inches)	__.__	__.__	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

10. AC SURFACE COURSE LIFT

Layer Number	07	09	[11]
Nominal First Lift Placement Thickness (Inches)	2.5	2.5	[3.75]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

11. SURFACE FRICTION COURSE
    Layer Number [__ __]
    Nominal Placement Thickness (Inches) [__.__]

12. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [__ + __ __]
    Surface Course [__ + __ __]
    Surface Friction Course [__ + __ __]

13. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2 (specify offset from O/S feet) [__ __.__]

14. SIGNIFICANT EVENTS DURING CONSTRUCTION(disruptions, rain, equip. problems, etc.)

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [0501] * TEST SECTION NO. [08]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-10-91]
2. DATE PAVING OPERATIONS COMPLETED [9-12-91]
3. LAYER NUMBER Trench [1]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 257.
   - Minimum..... 254.
   - Standard Deviation... ___.__
   - Number of Tests ..... 3.
   - Maximum..... 262.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem					
7	B	Steel-Whl Tandem					
8	C	Steel-Whl Tandem					
9	D	Steel-Whl Tandem					
10	E	Pneumatic-Tired					
11	F	Pneumatic-Tired					
12	G	Pneumatic-Tired					
13	H	Pneumatic-Tired					
14	I	Single-Drum Vibr.					
15	J	Single-Drum Vibr.					
16	K	Single-Drum Vibr.					
17	L	Single-Drum Vibr.					
18	M	Double-Drum Vibr.	150.				Both 2.5mph-VIB 3.5mph-STA
19	N	Double-Drum Vibr.	100.				
20	O	Double-Drum Vibr.					
21	P	Double-Drum Vibr.					
22	Q	Other					

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M			
24	Coverages	2.			
	INTERMEDIATE				
25	Roller Code (A-Q)				
26	Coverages				
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N			
28	Coverages	2.			
29	Air Temperature (°F)	75.			
30	Compacted Thickness (In)	2.25			
31	Curing Period (Days)				

PREPARER Kmounes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [08]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-11-91]
2. DATE PAVING OPERATIONS COMPLETED [9-12-91]

3. LAYER NUMBER Intermediate [2]

4. MIXING TEMPERATURE (°F) [295.]

5. LAYDOWN TEMPERATURES (°F)
   Mean..... 250.
   Minimum..... 248.
   Standard Deviation... ---.-
   Number of Tests ..... 3.
   Maximum..... 252.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	---.-	[redacted]	[redacted]	[redacted]	[redacted]
7	B	Steel-Whl Tandem	---.-				
8	C	Steel-Whl Tandem	---.-				
9	D	Steel-Whl Tandem	---.-				
10	E	Pneumatic-Tired	---.-	----.			
11	F	Pneumatic-Tired	---.-	----.			
12	G	Pneumatic-Tired	---.-	----.			
13	H	Pneumatic-Tired	---.-	----.			
14	I	Single-Drum Vibr.	---.-	[redacted]	----.	---.	---.-
15	J	Single-Drum Vibr.	---.-		----.	---.	---.-
16	K	Single-Drum Vibr.	---.-		----.	---.	---.-
17	L	Single-Drum Vibr.	---.-		----.	---.	---.-
18	M	Double-Drum Vibr.	150.		----.	---.	---.-
19	N	Double-Drum Vibr.	100.		----.	---.	---.-
20	O	Double-Drum Vibr.	---.-		----.	---.	---.-
21	P	Double-Drum Vibr.	---.-		----.	---.	---.-
22	Q	Other					

Both 2.5mph-VIBR 3.5mph-STAT

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M	---	---	---
24	Coverages	2.	---.	---.	---.
	INTERMEDIATE				
25	Roller Code (A-Q)	---	---	---	---
26	Coverages	---.	---.	---.	---.
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N	---	---	---
28	Coverages	2.	---.	---.	---.
29	Air Temperature (°F)	75.	---.	---.	---.
30	Compacted Thickness (In)	--.-	--.-	--.-	--.-
31	Curing Period (Days)	---.-	---.-	---.-	---.-

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [08]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-12-91]
2. DATE PAVING OPERATIONS COMPLETED [9-12-91]
3. LAYER NUMBER SURFACE [11]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 246.
   - Minimum..... 236.
   - Standard Deviation... ---.-
   - Number of Tests ..... 3.
   - Maximum..... 253.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	---.-				
7	B	Steel-Whl Tandem	---.-				
8	C	Steel-Whl Tandem	---.-				
9	D	Steel-Whl Tandem	---.-				
10	E	Pneumatic-Tired	---.-	----.			
11	F	Pneumatic-Tired	---.-	----.			
12	G	Pneumatic-Tired	---.-	----.			
13	H	Pneumatic-Tired	---.-	----.			
14	I	Single-Drum Vibr.	---.-		----.	---.	---.-
15	J	Single-Drum Vibr.	---.-		----.	---.	---.-
16	K	Single-Drum Vibr.	---.-		----.	---.	---.-
17	L	Single-Drum Vibr.	---.-		----.	---.	---.-
18	M	Double-Drum Vibr.	150.		----.	---.	---.-
19	N	Double-Drum Vibr.	100.		----.	---.	---.-
20	O	Double-Drum Vibr.	---.-		----.	---.	---.-
21	P	Double-Drum Vibr.	---.-		----.	---.	---.-
22	Q	Other					

Both 2.5mph-VIBR 3.5mph-STAT

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M	---	---	---
24	Coverages	2.	---.	---.	---.
	INTERMEDIATE				
25	Roller Code (A-Q)	---	---	---	---
26	Coverages	---.	---.	---.	---.
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N	---	---	---
28	Coverages	2.	---.	---.	---.
29	Air Temperature (°F)	75.	---.	---.	---.
30	Compacted Thickness (In)	---.-	---.-	---.-	---.-
31	Curing Period (Days)	---.-	---.-	---.-	---.-

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [08]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C)[1]		A	A	A	
Rod Depth (Inches)		00	00	00	
Number of Measurements		02	02	02	
Average (pcf)		149.3	147.7	147.6	
Maximum (pcf)		149.4	148.0	147.9	
Minimum (pcf)		149.0	147.4	147.2	
Standard Deviation (pcf)					
Layer Number		07	09	11	

[1]Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACURER OF NUCLEAR DENSITY GAUGE Troxler

3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3440

4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 16505

5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3556

6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2 ___
Profile Index (Inches/Mile) ___
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3 ___
Height of Blanking Band (Inches) ___
Cutoff Height (Inches) ___

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) NO

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [08]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
0+00	0				4.4	
	3				4.8	
	3				5.5	
	1				4.5	
	1				3.0	
0+50	0				4.0	
	0				4.4	
	0				4.4	
	0				4.4	
	0				3.6	
1+00	0				4.5	
	2				4.4	
	2				4.4	
	2				4.5	
	2				3.8	
1+50	0				4.4	
	7				4.8	
	1				4.5	
	1				4.5	
	0				4.0	
2+00	0				4.4	
	3				4.6	
	2				4.4	
	2				4.4	
	0				4.0	
2+50	0				3.0	
	5				4.4	
	2				4.4	
	2				4.2	
	0				4.2	
3+00	0				4.4	
	3				4.4	
	2				4.4	
	2				4.3	
	0				4.3	
LAYER NUMBER					1 1	

PREPARER Klemunes EMPLOYER FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 8]

LAYER THICKNESS MEASUREMENTS (Inches) SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	0				4.4	
	36				4.7	
	72				4.6	
	111				4.6	
	150				4.2	
4+00	0				4.3	
	49				4.6	
	78				4.7	
	112				4.7	
	152				4.0	
4+50	0				4.2	
	37				4.7	
	76				4.6	
	113				4.4	
	151				4.0	
5+00	0				4.4	
	37				5.0	
	74				4.8	
	111				5.0	
	148				4.3	
+						
+						
+						
LAYER NUMBER					11	

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [0 8]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

RoD & Level Surveys were completed before and after construction. Measurements were not taken between lifts

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 1-8-92

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE CLASS	4. LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[62]				
2	[06]	[62]	[14.5]	___.__	___.__	___.__
3	[05]	[22]	[4.25]	___.__	___.__	___.__
4	[03]	[01]	[3.75]	___.__	___.__	___.__
5	[09]	[02]	[0.0]	___.__	___.__	___.__
6	[02]	[86]	[0.1]	___.__	___.__	___.__
7	[01]	[13]	[2.0]	___.__	___.__	___.__
8	[02]	[86]	[0.1]	___.__	___.__	___.__
9	[01]	[13]	[2.0]	___.__	___.__	___.__
10	[__ __]	[__ __]	[___.__]	___.__	___.__	___.__
11	[__ __]	[__ __]	[___.__]	___.__	___.__	___.__
12	[__ __]	[__ __]	[___.__]	___.__	___.__	___.__
13	[__ __]	[__ __]	[___.__]	___.__	___.__	___.__
14	[__ __]	[__ __]	[___.__]	___.__	___.__	___.__
15	[__ __]	[__ __]	[___.__]	___.__	___.__	___.__

NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.
2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

   If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.
3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER K TENNYSON EMPLOYER SHRP/FHWA DATE 1-14-92

NO SKETCH

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE [__ __] * SPS PROJECT CODE [__ __] * TEST SECTION NO. [__ __]

PREPARER _____ EMPLOYER _____ DATE _____

no patching

LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [__ __] * SPS PROJECT CODE [__ __] * TEST SECTION NO. [__ __]

1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __]

2. DATE PATCHING OPERATIONS COMPLETED [__ __-__ __-__ __]

3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

5. SUMMARY OF PATCHING

	NUMBER	TOTAL AREA (SQ. FT.)
Surface Only	[__ __]	[__ __ __ __]
Surface and partial base replacement	[__ __]	[__ __ __ __]
Full depth	[__ __]	[__ __ __ __]

6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES [__]
   Deflection.... 1 Coring.... 2 Visual..... 3
   Other..... 4 (specify)_____

7. METHOD USED TO FORM PATCH BOUNDARIES [__]
   None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling..... 4
   Other..... 5 (Specify)_____

8. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

9. PATCH MATERIAL [__]
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6
   Other.. 7 (Specify)_____

10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER _____ EMPLOYER _____ DATE _____

NO Level-up

LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [__ __] * SPS PROJECT CODE [__ __] * TEST SECTION NO. [__ __]

1. DATE LEVEL-UP LAYER APPLIED [__ __-__ __-__ __]

2. PLACEMENT LOCATION OF LEVEL-UP LAYER [__]
   Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4

3. LENGTH OF TEST SECTION COVERED [__]
   Full Length of Test Section 1
   Partial Length of Test Section .... 2 (enter start and end station numbers)
   Outside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __
   Inside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __

4. AVERAGE RUT DIMENSIONS (Inches)

	DEPTH	WIDTH
Outside Wheel Path Rut	[__ . __]	[__ __.__]
Inside Wheel Path Rut	[__ . __]	[__ __.__]

5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP [__]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4
   Wheel Path Milling..... 5 (specify, inches) DEPTH __.__ WIDTH __.__
   Other..... 6 (Specify) _____

6. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

7. TYPE OF LEVEL-UP MATERIAL
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5
   Other... 6 (Specify) _____

8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__ __]

9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER _____ EMPLOYER _____ DATE _____

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

1. DATE OF MILLING OPERATION [09-10-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 1000

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]
Outside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [__0]

8. Height of Ridge Between Parallel Passes? (Inches) [__.0]

9. Other Comments? (Yes, No) [NO]
   Comments _____

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [__48]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [__NA__]
13. LAYER NUMBER OF MILL REPLACEMENT [5]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [__0.__]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [9]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__ __.__]

17. COMMENTS _____

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

1. DATE OF MILLING OPERATION [09-07-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 750

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	11.	2.0	1.8	--.-	[2.0]
Outside lane edge	11.	2.3	2.0	--.-	[2.0]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [0]

8. Height of Ridge Between Parallel Passes? (Inches) [.0]

9. Other Comments? (Yes, No) [YES]
   Comments Passing LANE had ABOUT 10% Delamination of ABOUT 1/4" Thickness with some very near E

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [0]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [NO]
13. LAYER NUMBER OF MILL REPLACEMENT [1]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [2.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [2]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) _____

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__.__]

17. COMMENTS _____

PREPARER K Lemmons EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

1. SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLAY [3]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4

2. TACK COAT
   Layer Numbers [__ __] [06] [08]
   Material Type None..... 1 SS-1.... 2 SS-1H.... 3 CRS-1.... 4 [02]
   CRS-2.... 5 CMS-2.... 6 CMS-2H.. 7 CSS-1.... 8 CSS-1H... 9
   Other.... 10 (Specify) _____

3. TACK COAT DILUTION
   (Percent) [__ __]
   Mixing Rate Parts Diluent ___ TO Parts Asphalt ___

4. TACK COAT APPLICATION RATE (Gal/Sq. Yd.) [0.1]

5. ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers
Plant 1	[2]	Boeing 900 COATED	[__ 4]	[__ 8]	[7] [9] [__]
Plant 2	[__]	_____	[__ __ __]	[__ __]	[__] [__] [__]
Plant 3	[__]	_____	[__ __ __]	[__ __]	[__] [__] [__]

   Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify _____

6. MANUFACTURER OF ASPHALT CONCRETE PAVER BLAW - KNOX

7. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER 280 1971

8. SINGLE PASS LAYDOWN WIDTH (Feet) Intermediate, Surface [22.0]
   Trench [12.5]

9. AC BINDER COURSE LIFT

Layer Number	__ __	__ __	[__ __]
Nominal First Lift Placement Thickness (Inches)	__.__	__.__	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

10. AC SURFACE COURSE LIFT

Layer Number	__ __	7	[09]
Nominal First Lift Placement Thickness (Inches)	__.__	2.75	[2.5]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

11. SURFACE FRICTION COURSE
    Layer Number [__ __]
    Nominal Placement Thickness (Inches) [__.__]

12. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [__ + __ __]
    Surface Course [__ + __ __]
    Surface Friction Course [__ + __ __]

13. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2 (specify offset from O/S feet) [__ __.__]

14. SIGNIFICANT EVENTS DURING CONSTRUCTION(disruptions, rain, equip. problems, etc.)

_____

_____

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-10-91]
2. DATE PAVING OPERATIONS COMPLETED [9-12-91]
3. LAYER NUMBER TRENCH [2]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 250.
   - Minimum..... 228.
   - Standard Deviation... ---.-
   - Number of Tests ..... 3.
   - Maximum..... 257.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	---.-				
7	B	Steel-Whl Tandem	---.-				
8	C	Steel-Whl Tandem	---.-				
9	D	Steel-Whl Tandem	---.-				
10	E	Pneumatic-Tired	---.-				
11	F	Pneumatic-Tired	---.-	---.-	---.-	---.-	---.-
12	G	Pneumatic-Tired	---.-	---.-	---.-	---.-	---.-
13	H	Pneumatic-Tired	---.-	---.-	---.-	---.-	---.-
14	I	Single-Drum Vibr.	---.-				
15	J	Single-Drum Vibr.	---.-		---.-	---.-	---.-
16	K	Single-Drum Vibr.	---.-		---.-	---.-	---.-
17	L	Single-Drum Vibr.	---.-		---.-	---.-	---.-
18	M	Double-Drum Vibr.	15.0		---.-	---.-	---.-
19	N	Double-Drum Vibr.	10.0		---.-	---.-	---.-
20	O	Double-Drum Vibr.	---.-		---.-	---.-	---.-
21	P	Double-Drum Vibr.	---.-		---.-	---.-	---.-
22	Q	Other			---.-	---.-	---.-

Both 2.5mph-VIBR 3.5mph-STAT

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M	---	---	---
24	Coverages	2.	---.	---.	---.
	INTERMEDIATE				
25	Roller Code (A-Q)	---	---	---	---
26	Coverages	---.	---.	---.	---.
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N	---	---	---
28	Coverages	2.	---.	---.	---.
29	Air Temperature (°F)	70.	---.	---.	---.
30	Compacted Thickness (In)	---.-	---.-	---.-	---.-
31	Curing Period (Days)	---.-	---.-	---.-	---.-

PREPARER K Remmes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [02]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-12-91]
2. DATE PAVING OPERATIONS COMPLETED [9-18-91]
3. LAYER NUMBER SURFACE [9]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean.....
   - Minimum..... 239.
   - Standard Deviation... ___.__
   - Number of Tests ..... 3.
   - Maximum..... 244.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem					
7	B	Steel-Whl Tandem					
8	C	Steel-Whl Tandem					
9	D	Steel-Whl Tandem					
10	E	Pneumatic-Tired					
11	F	Pneumatic-Tired					
12	G	Pneumatic-Tired					
13	H	Pneumatic-Tired					
14	I	Single-Drum Vibr.					
15	J	Single-Drum Vibr.					
16	K	Single-Drum Vibr.					
17	L	Single-Drum Vibr.					
18	M	Double-Drum Vibr.	15.0				Both 2.5mph-VIBR
19	N	Double-Drum Vibr.	10.0				3.5mph-STAT
20	O	Double-Drum Vibr.					
21	P	Double-Drum Vibr.					
22	Q	Other					

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR			
23	Roller Code (A-Q)	1 STAT M			
24	Coverages	2.			
	INTERMEDIATE				
25	Roller Code (A-Q)				
26	Coverages				
	FINAL	1 VIBR			
27	Roller Code (A-Q)	1 STAT N			
28	Coverages	2.			
29	Air Temperature (°F)	75.			
30	Compacted Thickness (In)				
31	Curing Period (Days)				

PREPARER Kemmes EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C)[1]		A		A	
Rod Depth (Inches)		00		00	
Number of Measurements		02		02	
Average (pcf)		149.2		145.9	
Maximum (pcf)		150.2		145.9	
Minimum (pcf)		148.2		145.8	
Standard Deviation (pcf)					
Layer Number		07		09	

[1]Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACURER OF NUCLEAR DENSITY GAUGE TROXLER

3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3440

4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 16505

5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3556

6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2	
Profile Index (Inches/Mile)	
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3	
Height of Blanking Band (Inches)	
Cutoff Height (Inches)	

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) NO

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
0+00	0	— — · —	— — · —	— — · —	2.1	— — · —
	3	— — · —	— — · —	— — · —	2.4	— — · —
	7	— — · —	— — · —	— — · —	2.5	— — · —
	11	— — · —	— — · —	— — · —	2.4	— — · —
	14	— — · —	— — · —	— — · —	2.1	— — · —
0+50	0	— — · —	— — · —	— — · —	1.4	— — · —
	3	— — · —	— — · —	— — · —	2.0	— — · —
	7	— — · —	— — · —	— — · —	2.0	— — · —
	11	— — · —	— — · —	— — · —	2.0	— — · —
	15	— — · —	— — · —	— — · —	1.5	— — · —
1+00	0	— — · —	— — · —	— — · —	1.5	— — · —
	3	— — · —	— — · —	— — · —	1.9	— — · —
	7	— — · —	— — · —	— — · —	2.1	— — · —
	11	— — · —	— — · —	— — · —	2.0	— — · —
	14	— — · —	— — · —	— — · —	2.0	— — · —
1+50	0	— — · —	— — · —	— — · —	1.7	— — · —
	3	— — · —	— — · —	— — · —	2.0	— — · —
	7	— — · —	— — · —	— — · —	2.3	— — · —
	11	— — · —	— — · —	— — · —	2.5	— — · —
	14	— — · —	— — · —	— — · —	2.5	— — · —
2+00	0	— — · —	— — · —	— — · —	2.1	— — · —
	3	— — · —	— — · —	— — · —	1.8	— — · —
	7	— — · —	— — · —	— — · —	2.0	— — · —
	11	— — · —	— — · —	— — · —	2.2	— — · —
	15	— — · —	— — · —	— — · —	2.0	— — · —
2+50	0	— — · —	— — · —	— — · —	1.7	— — · —
	3	— — · —	— — · —	— — · —	2.1	— — · —
	7	— — · —	— — · —	— — · —	2.1	— — · —
	11	— — · —	— — · —	— — · —	2.3	— — · —
	15	— — · —	— — · —	— — · —	2.0	— — · —
3+00	0	— — · —	— — · —	— — · —	1.5	— — · —
	4	— — · —	— — · —	— — · —	2.1	— — · —
	8	— — · —	— — · —	— — · —	2.0	— — · —
	11	— — · —	— — · —	— — · —	2.0	— — · —
	14	— — · —	— — · —	— — · —	2.0	— — · —
LAYER NUMBER		— —	— —	— —	— 9	— —

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	0 1 4 6 6	— — · —	— — · —	— — · —	— 7 · 0 — 5 · 1 — 2 · 1 — — · — — — · —	— — · — — — · — — — · — — — · — — — · —
4+00	0 6 6 1 0	— — · —	— — · —	— — · —	— 1 · 7 — 2 · 0 — 2 · 1 — 2 · 4 — 2 · 1	— — · — — — · — — — · — — — · — — — · —
4+50	0 6 1 3 0	— — · —	— — · —	— — · —	— 1 · 5 — 2 · 0 — 2 · 0 — 2 · 4 — 1 · 8	— — · — — — · — — — · — — — · — — — · —
5+00	0 0 5 2 0	— — · —	— — · —	— — · —	— 1 · 5 — 2 · 0 — 1 · 6 — 2 · 3 — 2 · 0	— — · — — — · — — — · — — — · — — — · —
—+— —		— — · —	— — · —	— — · —	— — · —	— — · —
—+— —		— — · —	— — · —	— — · —	— — · —	— — · —
—+— —		— — · —	— — · —	— — · —	— — · —	— — · —
LAYER NUMBER		— —	— —	— —	— 9	— —

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [09]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod and level surveys were completed before and after construction. Measurements were not taken between lifts

PREPARER kkemmes EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [10]

POLYBUILT

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE CLASS	4. LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[62]	[redacted]	[redacted]	[redacted]	[redacted]
2	[06]	[62]	[13.9]	____	____	____
3	[05]	[02]	[02.75]	____	____	____
4	[09]	[01]	[05.25]	____	____	____
5	[09]	[00]	[00.0]	____	____	____
6	[02]	[86]	[00.1]	____	____	____
7	[01]	[20]	[02.0]	____	____	____
8	[02]	[86]	[00.1]	____	____	____
9	[01]	[20]	[30]	____	____	____
10	[__ __]	[__ __]	[_ _ _._]	____	____	____
11	[__ __]	[__ __]	[_ _ _._]	____	____	____
12	[__ __]	[__ __]	[_ _ _._]	____	____	____
13	[__ __]	[__ __]	[_ _ _._]	____	____	____
14	[__ __]	[__ __]	[_ _ _._]	____	____	____
15	[__ __]	[__ __]	[_ _ _._]	____	____	____

NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.
2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

   If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.
3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER Klemunes, John EMPLOYER SHRP/FHWA DATE 11-5-91

no Sketch

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [1 0]

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11-5-91

no patching

LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [10]

1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __]

2. DATE PATCHING OPERATIONS COMPLETED [__ __-__ __-__ __]

3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

5. SUMMARY OF PATCHING

	NUMBER	TOTAL AREA (SQ. FT.)
Surface Only	[__ __]	[__ __ __ __]
Surface and partial base replacement	[__ __]	[__ __ __ __]
Full depth	[__ __]	[__ __ __ __]

6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES [__]
   Deflection.... 1 Coring.... 2 Visual..... 3
   Other..... 4 (specify)_____

7. METHOD USED TO FORM PATCH BOUNDARIES [__]
   None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling..... 4
   Other..... 5 (Specify)_____

8. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

9. PATCH MATERIAL [__]
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6
   Other.. 7 (Specify)_____

10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11-5-91

NO Level-up

LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [1 0]

1. DATE LEVEL-UP LAYER APPLIED [__ __-__ __-__ __]

2. PLACEMENT LOCATION OF LEVEL-UP LAYER [__]
   Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4

3. LENGTH OF TEST SECTION COVERED [__]
   Full Length of Test Section 1
   Partial Length of Test Section .... 2 (enter start and end station numbers)
   Outside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __
   Inside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __

4. AVERAGE RUT DIMENSIONS (Inches)

	DEPTH	WIDTH
Outside Wheel Path Rut	[__ . __]	[__ __.__]
Inside Wheel Path Rut	[__ . __]	[__ __.__]

5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP [__]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4
   Wheel Path Milling..... 5 (specify, inches) DEPTH __.__ WIDTH __.__
   Other..... 6 (Specify) _____

6. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

7. TYPE OF LEVEL-UP MATERIAL
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5
   Other... 6 (Specify) _____

8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__ __]

9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11-5-91

OPEN GRADED

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [10]

1. DATE OF MILLING OPERATION [09-10-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 1000

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	__.	__.__	__.__	__.__	[.96]
Outside lane edge	__.	__.__	__.__	__.__	[.96]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [0]

8. Height of Ridge Between Parallel Passes? (Inches) [.0]

9. Other Comments? (Yes, No) [NO]
   Comments _____

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [48]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [NO]
13. LAYER NUMBER OF MILL REPLACEMENT [1]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [2.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [3]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) PolyBilt

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__.__]

17. COMMENTS _____

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [10]

1. SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLAY [3]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4

2. TACK COAT
   Layer Numbers [05] [08]
   Material Type None..... 1 SS-1.... 2 SS-1H.... 3 CRS-1.... 4 [__ __]
   CRS-2.... 5 CMS-2.... 6 CMS-2H.. 7 CSS-1.... 8 CSS-1H... 9
   Other.... 10 (Specify) _____

3. TACK COAT DILUTION
   (Percent) [__ __]
   Mixing Rate Parts Diluent ___ TO Parts Asphalt ___

4. TACK COAT APPLICATION RATE (Gal/Sq. Yd.) [0.1]

5. ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers
Plant 1	[2]	Boeing 400	[__ 4]	[__ 8]	[7] [9] [__]
Plant 2	[__]	____0____	[__ __]	[__ __]	[__] [__] [__]
Plant 3	[__]	_____	[__ __]	[__ __]	[__] [__] [__]

   Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify_____

6. MANUFACTURER OF ASPHALT CONCRETE PAVER Blaw-Knox

7. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER 220 1971

8. SINGLE PASS LAYDOWN WIDTH (Feet) Intermediate, top [22.0]

9. AC BINDER COURSE LIFT
   Layer Number [__ __]
   Nominal First Lift Placement Thickness (Inches) [__.__]
   Nominal Second Lift Placement Thickness (Inches) [__.__]

10. AC SURFACE COURSE LIFT
    Layer Number [__ 9]
    Nominal First Lift Placement Thickness (Inches) [3.5]
    Nominal Second Lift Placement Thickness (Inches) [__.__]

11. SURFACE FRICTION COURSE
    Layer Number [__ __]
    Nominal Placement Thickness (Inches) [__.__]

12. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [__ + __ __]
    Surface Course [__ + __ __]
    Surface Friction Course [__ + __ __]

13. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2 (specify offset from O/S feet) [__ __.__]

14. SIGNIFICANT EVENTS DURING CONSTRUCTION(disruptions, rain, equip. problems, etc.)

PREPARER K Kemmes EMPLOYER SHRP/EHNA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [0951] * TEST SECTION NO. [02]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-11-91]
2. DATE PAVING OPERATIONS COMPLETED [- - -]

3. LAYER NUMBER Bottom [7]

4. MIXING TEMPERATURE (°F) [305.]

5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 273.
   - Minimum..... 270.
   - Standard Deviation... ---.
   - Number of Tests ..... 3.
   - Maximum..... 279.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)	
6	A	Steel-Whl Tandem						
7	B	Steel-Whl Tandem						
8	C	Steel-Whl Tandem						
9	D	Steel-Whl Tandem						
10	E	Pneumatic-Tired						
11	F	Pneumatic-Tired						
12	G	Pneumatic-Tired						
13	H	Pneumatic-Tired						
14	I	Single-Drum Vibr.						
15	J	Single-Drum Vibr.						
16	K	Single-Drum Vibr.						
17	L	Single-Drum Vibr.						
18	M	Double-Drum Vibr.	15.0					Both
19	N	Double-Drum Vibr.	10.0					2.5mph-VIBR 3.5mph-STAT
20	O	Double-Drum Vibr.						
21	P	Double-Drum Vibr.						
22	Q	Other						

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M			
24	Coverages	2.			
	INTERMEDIATE				
25	Roller Code (A-Q)				
26	Coverages				
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N			
28	Coverages	2.			
29	Air Temperature (°F)	71.			
30	Compacted Thickness (In)				
31	Curing Period (Days)				

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [010]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-12-91]
2. DATE PAVING OPERATIONS COMPLETED [- - - - - -]

3. LAYER NUMBER SURFACE [9]

4. MIXING TEMPERATURE (°F) [285.]

5. LAYDOWN TEMPERATURES (°F)
   Mean..... 274.
   Minimum..... 272.
   Standard Deviation... ---.
   Number of Tests ..... 3.
   Maximum..... 280.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem					
7	B	Steel-Whl Tandem					
8	C	Steel-Whl Tandem					
9	D	Steel-Whl Tandem					
10	E	Pneumatic-Tired					
11	F	Pneumatic-Tired					
12	G	Pneumatic-Tired					
13	H	Pneumatic-Tired					
14	I	Single-Drum Vibr.					
15	J	Single-Drum Vibr.					
16	K	Single-Drum Vibr.					
17	L	Single-Drum Vibr.					
18	M	Double-Drum Vibr.	15.0				
19	N	Double-Drum Vibr.	10.0				
20	O	Double-Drum Vibr.					
21	P	Double-Drum Vibr.					
22	Q	Other					

Both 2.5mph-VIBR 3.5mph-STAT

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M			
24	Coverages	2.			
	INTERMEDIATE				
25	Roller Code (A-Q)				
26	Coverages				
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N			
28	Coverages	2.			
29	Air Temperature (°F)	71.			
30	Compacted Thickness (In)				
31	Curing Period (Days)				

PREPARER Klemmas EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [10]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C)[1]	__	__	A	A	__
Rod Depth (Inches)	__ __	__ __	0 0	0 0	__ __
Number of Measurements	__ __	__ __	0 0	0 0	__ __
Average (pcf)	__ __ __.__	__ __ __.__	1 4 8.6	1 4 8.0	__ __ __.__
Maximum (pcf)	__ __ __.__	__ __ __.__	1 4 9.0	1 4 8.0	__ __ __.__
Minimum (pcf)	__ __ __.__	__ __ __.__	1 4 8.1	1 4 8.0	__ __ __.__
Standard Deviation (pcf)	__ __ __.__	__ __ __.__	__ __ __.__	__ __ __.__	__ __ __.__
Layer Number	__ __	__ __	0 7	0 9	__ __

[1]Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACURER OF NUCLEAR DENSITY GAUGE TROXLER

3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3440

4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 16505

5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3556

6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2	__
Profile Index (Inches/Mile)	__ __
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3	__
Height of Blanking Band (Inches)	__.__ __
Cutoff Height (Inches)	__.__ __

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) NO

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [10]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
0+00	0	— — . —	— — . —	— — . —	4.1	— — . —
	39	— — . —	— — . —	— — . —	5.4	— — . —
	79	— — . —	— — . —	— — . —	4.5	— — . —
	109	— — . —	— — . —	— — . —	4.7	— — . —
	147	— — . —	— — . —	— — . —	4.8	— — . —
0+50	0	— — . —	— — . —	— — . —	4.7	— — . —
	37	— — . —	— — . —	— — . —	5.1	— — . —
	79	— — . —	— — . —	— — . —	5.0	— — . —
	109	— — . —	— — . —	— — . —	5.3	— — . —
	149	— — . —	— — . —	— — . —	4.4	— — . —
1+00	0	— — . —	— — . —	— — . —	4.5	— — . —
	41	— — . —	— — . —	— — . —	4.8	— — . —
	81	— — . —	— — . —	— — . —	4.6	— — . —
	109	— — . —	— — . —	— — . —	5.0	— — . —
	148	— — . —	— — . —	— — . —	4.3	— — . —
1+50	0	— — . —	— — . —	— — . —	4.4	— — . —
	39	— — . —	— — . —	— — . —	5.0	— — . —
	79	— — . —	— — . —	— — . —	5.0	— — . —
	105	— — . —	— — . —	— — . —	5.0	— — . —
	151	— — . —	— — . —	— — . —	4.5	— — . —
2+00	0	— — . —	— — . —	— — . —	4.1	— — . —
	40	— — . —	— — . —	— — . —	5.0	— — . —
	79	— — . —	— — . —	— — . —	4.9	— — . —
	109	— — . —	— — . —	— — . —	5.1	— — . —
	151	— — . —	— — . —	— — . —	4.5	— — . —
2+50	0	— — . —	— — . —	— — . —	4.3	— — . —
	35	— — . —	— — . —	— — . —	4.9	— — . —
	71	— — . —	— — . —	— — . —	4.7	— — . —
	109	— — . —	— — . —	— — . —	5.0	— — . —
	149	— — . —	— — . —	— — . —	4.4	— — . —
3+00	0	— — . —	— — . —	— — . —	4.3	— — . —
	39	— — . —	— — . —	— — . —	5.0	— — . —
	76	— — . —	— — . —	— — . —	4.8	— — . —
	108	— — . —	— — . —	— — . —	5.0	— — . —
	147	— — . —	— — . —	— — . —	4.5	— — . —
LAYER NUMBER		— —	— —	— —	— 9	— —

PREPARER Klemmes EMPLOYER SHRP/EHNA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [10]

LAYER THICKNESS MEASUREMENTS (Inches) SHEET ____ OF ____

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	0				4.3	
	38				5.0	
	73				4.9	
	105				5.1	
	145				4.7	
4+00	0				4.4	
	34				4.7	
	74				4.7	
	108				4.7	
	146				4.3	
4+50	0				4.1	
	33				4.8	
	72				4.8	
	109				5.0	
	145				4.3	
5+00	0				4.1	
	36				5.0	
	75				4.8	
	108				5.0	
	147				4.5	
+						
+						
+						
LAYER NUMBER					9	

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [10]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod and level surveys completed before and after construction. Measurements were not taken between lifts

PREPARER John A Kennedy EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA REVISED LAYER DESCRIPTIONS CONSTRUCTION DATA SHEET 2	* STATE CODE [3 0] * SPS PROJECT CODE [0 5] * TEST SECTION NO. [1 1]

KRATON

1. LAYER NUMBER	2. LAYER DESCRIPTION	3. MATERIAL TYPE CLASS	4. LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[6 2]				
2	[0 6]	[6 2]	[_ 1 3.4]	_ _ _.-	_ _ _.-	_ _ _.-
3	[0 5]	[2 2]	[_ _2.75]	_ _ _.-	_ _ _.-	_ _ _.-
4	[0 3]	[0 1]	[_ _5.25]	_ _ _.-	_ _ _.-	_ _ _.-
5	[0 9]	[0 2]	[_ _0.0]	_ _ _.-	_ _ _.-	_ _ _.-
6	[0 2]	[8 6]	[_ _0.1]	_ _ _.-	_ _ _.-	_ _ _.-
7	[0 1]	[2 0]	[_ _2.0]	_ _ _.-	_ _ _.-	_ _ _.-
8	[0 2]	[8 6]	[_ _0.1]	_ _ _.-	_ _ _.-	_ _ _.-
9	[0 1]	[2 0]	[_ _3.0]	_ _ _.-	_ _ _.-	_ _ _.-
10	[__ __]	[__ __]	[_ _ _.-]	_ _ _.-	_ _ _.-	_ _ _.-
11	[__ __]	[__ __]	[_ _ _.-]	_ _ _.-	_ _ _.-	_ _ _.-
12	[__ __]	[__ __]	[_ _ _.-]	_ _ _.-	_ _ _.-	_ _ _.-
13	[__ __]	[__ __]	[_ _ _.-]	_ _ _.-	_ _ _.-	_ _ _.-
14	[__ __]	[__ __]	[_ _ _.-]	_ _ _.-	_ _ _.-	_ _ _.-
15	[__ __]	[__ __]	[_ _ _.-]	_ _ _.-	_ _ _.-	_ _ _.-

NOTES:

1. Layer 1 is subgrade soil, the highest numbered layer is the pavement surface.
2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

   If milling was performed, the layers which were milled shall be assigned their previous layer number and material type. If the layer was completely removed by milling, it shall still be shown as a layer with a zero thickness.
3. Enter the material type classification codes from Tables A.5, A.6, A.7 and A.8 which best describes the material in each layer. If the layer was milled, enter the material classification code corresponding to the type material which was removed.
4. Enter the average thickness of each layer and the maximum, minimum, and standard deviation of the thickness measurements, if known. If a layer was partially milled, the remaining thickness of the layer shall be indicated.

PREPARER JOHN Kennedy EMPLOYER SHRP/FHWA DATE 11-5-91

NO Sketch

LTPP-SPS CONSTRUCTION DATA PRE-OVERLAY SURFACE PREPARATION SKETCH CONSTRUCTION DATA SHEET 3	* STATE CODE [30] * SPS PROJECT CODE [95] * TEST SECTION NO. [11]

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11-5-91

NO PATCHING

LTPP-SPS CONSTRUCTION DATA ASPHALT CONCRETE PATCHES CONSTRUCTION DATA SHEET 4	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [11]

1. DATE PATCHING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __]

2. DATE PATCHING OPERATIONS COMPLETED [__ __-__ __-__ __]

3. PRIMARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

4. SECONDARY DISTRESS OCCURRENCE PATCHED (code from Table A.22) [__ __]
   Other (Specify)_____

5. SUMMARY OF PATCHING

	NUMBER	TOTAL AREA (SQ. FT.)
Surface Only	[__ __]	[__ __ __ __]
Surface and partial base replacement	[__ __]	[__ __ __ __]
Full depth	[__ __]	[__ __ __ __]

6. METHOD USED TO DETERMINE LOCATION AND SIZES OF PATCHES [__]
   Deflection.... 1 Coring.... 2 Visual..... 3
   Other..... 4 (specify)_____

7. METHOD USED TO FORM PATCH BOUNDARIES [__]
   None ..... 1 Saw Cut..... 2 Air Hammer..... 3 Cold Milling..... 4
   Other..... 5 (Specify)_____

8. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

9. PATCH MATERIAL [__]
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5 Portland Cement Concrete..... 6
   Other.. 7 (Specify)_____

10. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

11. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (°F) [__ __ __]

12. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (°F) [__ __]
    Low Temperature (°F) [__ __]

13. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11-5-91

October 1990

no level-up

LTPP-SPS CONSTRUCTION DATA RUT LEVEL-UP TREATMENT CONSTRUCTION DATA SHEET 5	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [11]

1. DATE LEVEL-UP LAYER APPLIED [__ __-__ __-__ __]

2. PLACEMENT LOCATION OF LEVEL-UP LAYER [__]
   Outside Rut.... 1 Inside Rut.... 2 Both Ruts.... 3 Full Lane Width... 4

3. LENGTH OF TEST SECTION COVERED [__]
   Full Length of Test Section 1
   Partial Length of Test Section .... 2 (enter start and end station numbers)
   Outside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __
   Inside Wheel Path Rut: Start Station __ + __ __ End Station __ + __ __

4. AVERAGE RUT DIMENSIONS (Inches)

	DEPTH	WIDTH
Outside Wheel Path Rut	[__ . __]	[__ __.__]
Inside Wheel Path Rut	[__ . __]	[__ __.__]

5. RUT PREPARATION PRIOR TO APPLICATION OF LEVEL-UP [__]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4
   Wheel Path Milling..... 5 (specify, inches) DEPTH __.__ WIDTH __.__
   Other..... 6 (Specify) _____

6. COMPACTION EQUIPMENT [__]
   None ..... 1 Pneumatic roller.... 2 Vibratory Plate Compactor. 3 [__]
   Vibratory Roller.. 4 Steel Wheel Roller.. 5 Truck Tire..... 6
   Hand Tools..... 7 Other..... 8 (Specify)_____

7. TYPE OF LEVEL-UP MATERIAL
   Hot Mix Asphalt Concrete... 1 Plant Mix with Cutback Asphalt, Cold Laid..... 2
   Plant Mix with Emulsified Asphalt, Cold Laid. 3 Road Mix with Cutback Asphalt. 4
   Road Mix with Emulsified Asphalt..... 5
   Other... 6 (Specify) _____

8. MAXIMUM TOP SIZE AGGREGATE (Inches) [__.__ __]

9. MINIMUM TIME FROM MATERIAL PLACEMENT TO OPENING TO TRAFFIC (Hrs) [__ __]

10. MAXIMUM MATERIAL TEMPERATURE FOR TRAFFIC OPENING (if used) (•F) [__ __ __]

11. AIR TEMPERATURE DURING PLACEMENT OPERATIONS
    High Temperature (•F) [__ __]
    Low Temperature (•F) [__ __]

12. PREDOMINATE ROAD SURFACE MOISTURE CONDITION DURING PLACEMENT OPERATIONS [__]
    Dry..... 1 Moist..... 2 Wet..... 3

PREPARER Kbmunas EMPLOYER SHRP/FHWA DATE 11-5-91

October 1990

OPEN GRADED milling

LTPP-SPS CONSTRUCTION DATA PREPARATION OF MILLED TEST SECTIONS CONSTRUCTION DATA SHEET 6	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [11]

1. DATE OF MILLING OPERATION [09-03-91]

2. MANUFACTURER OF MILLING MACHINE (Specify) CMI

3. MILLING MACHINE MODEL DESIGNATION (Specify) 1000

4. WIDTH OF CUTTING HEAD (Inches) [150]

5. TOTAL MILLED DEPTH (Inches)

Location	No. Measrmnts	Maximum	Minimum	Std. Dev.	Average
Inside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]
Outside lane edge	__ __.	__ __.__	__ __.__	__ __.__	[__.96]

MILLED SURFACE CHARACTERISTICS

6. Macro Texture [1]
   Fine Macro Texture (≤¼ inch)... 1 Coarse Macro Texture(>¼ inch)... 2

7. Estimate of extent of test section surface area delaminated (Percent) [__0]

8. Height of Ridge Between Parallel Passes? (Inches) [__.0]

9. Other Comments? (Yes, No) [NO]
   Comments _____

10. WHERE PATCHES PLACED AFTER MILLING? (Yes, No) [NO]
    (If yes complete Construction Data Sheet 3)

11. LENGTH OF TIME MILLED SURFACE WAS OPENED TO TRAFFIC? (Hrs.) [__48]
12. WAS MILL REPLACEMENT LAYER THICKER THAN MILL DEPTH (YES,NO) [NO]
13. LAYER NUMBER OF MILL REPLACEMENT [1]
14. NOMINAL THICKNESS OF MILL REPLACEMENT MATERIAL (Inches) [__2.0]

15. TYPE OF MILL REPLACEMENT LAYER MATERIAL [3]
    "Virgin" Asphalt Concrete ..... 1 Recycled Asphalt Concrete.... 2
    Other... 3 (Specify) Kraton

16. WAS ADJACENT TRAVEL LANE MILLED TO SAME DEPTH AS TEST LANE? (Yes, No) [YES]
    IF NO, WIDTH MILLED SAME DEPTH AS TEST LANE (Feet) [__ __ . __]

17. COMMENTS _____

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA OVERLAY PLACEMENT OPERATIONS CONSTRUCTION DATA SHEET 7	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [11]

1. SURFACE PREPARATION PRIOR TO PLACEMENT OF OVERLAY [3]
   None..... 1 Broomed..... 2 Broomed + Asphaltic Tack Coat.... 3
   Asphaltic Tack Coat (only).... 4

2. TACK COAT
   Layer Numbers [06] [08] [02]
   Material Type None..... 1 SS-1.... 2 SS-1H.... 3 CRS-1.... 4
   CRS-2.... 5 CMS-2.... 6 CMS-2H.. 7 CSS-1.... 8 CSS-1H... 9
   Other.... 10 (Specify) _____

3. TACK COAT DILUTION
   (Percent) [__ __]
   Mixing Rate Parts Diluent ___ TO Parts Asphalt ___

4. TACK COAT APPLICATION RATE (Gal/Sq. Yd.) [0.1 __]

5. ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers
Plant 1	[2]	Boeing	[__ __ 4]	[__ 8]	[7] [9] [__]
Plant 2	[__]	_____	[__ __ __]	[__ __]	[__] [__] [__]
Plant 3	[__]	_____	[__ __ __]	[__ __]	[__] [__] [__]

   Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify _____

6. MANUFACTURER OF ASPHALT CONCRETE PAVER BLAW-KNOX

7. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER 220 PF971

8. SINGLE PASS LAYDOWN WIDTH (Feet) Intermediate, top [22.0]

9. AC BINDER COURSE LIFT

Layer Number	__ __	__ __	[__ __]
Nominal First Lift Placement Thickness (Inches)	__.__	__.__	[__.__]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

10. AC SURFACE COURSE LIFT

Layer Number	__ __	7	[9]
Nominal First Lift Placement Thickness (Inches)	__.__	2.5	[3.75]
Nominal Second Lift Placement Thickness (Inches)	__.__	__.__	[__.__]

11. SURFACE FRICTION COURSE
    Layer Number [__ __]
    Nominal Placement Thickness (Inches) [__.__]

12. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [__ + __ __]
    Surface Course [__ + __ __]
    Surface Friction Course [__ + __ __]

13. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within Lane.. 2 (specify offset from O/S feet) [__ __.__]

14. SIGNIFICANT EVENTS DURING CONSTRUCTION(disruptions, rain, equip. problems, etc.)

PREPARER Klommes EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [95] * TEST SECTION NO. [01]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-11-91]
2. DATE PAVING OPERATIONS COMPLETED [9-12-91]
3. LAYER NUMBER Both [2]
4. MIXING TEMPERATURE (°F) [295.]
5. LAYDOWN TEMPERATURES (°F)
   - Mean..... 266.
   - Minimum..... 258.
   - Standard Deviation... ---.-
   - Number of Tests ..... 3.
   - Maximum..... 270.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	---.-				
7	B	Steel-Whl Tandem	---.-				
8	C	Steel-Whl Tandem	---.-				
9	D	Steel-Whl Tandem	---.-				
10	E	Pneumatic-Tired	---.-	----.			
11	F	Pneumatic-Tired	---.-	----.			
12	G	Pneumatic-Tired	---.-	----.			
13	H	Pneumatic-Tired	---.-	----.			
14	I	Single-Drum Vibr.	---.-		----.	---.	---.-
15	J	Single-Drum Vibr.	---.-		----.	---.	---.-
16	K	Single-Drum Vibr.	---.-		----.	---.	---.-
17	L	Single-Drum Vibr.	---.-		----.	---.	---.-
18	M	Double-Drum Vibr.	15.0		----.	---.	---.-
19	N	Double-Drum Vibr.	10.0		----.	---.	---.-
20	O	Double-Drum Vibr.			----.	---.	---.-
21	P	Double-Drum Vibr.	---.-		----.	---.	---.-
22	Q	Other			----.	---.	---.-

Both
2.5mph-VIBR
3.5mph-STAT

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M	—	—	—
24	Coverages	2.	---.	---.	---.
	INTERMEDIATE				
25	Roller Code (A-Q)	—	—	—	—
26	Coverages	---.	---.	---.	---.
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N	—	—	—
28	Coverages	2.	---.	---.	---.
29	Air Temperature (°F)	75.	---.	---.	---.
30	Compacted Thickness (In)	--.-	--.-	--.-	--.-
31	Curing Period (Days)	---.-	---.-	---.-	---.-

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11-5-91

LTPP-SPS CONSTRUCTION DATA OVERLAY COMPACTION DATA CONSTRUCTION DATA SHEET 8	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [01]

1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-12-91]
2. DATE PAVING OPERATIONS COMPLETED [9-12-91]

3. LAYER NUMBER SURFACE [9]

4. MIXING TEMPERATURE (°F) [290.]

5. LAYDOWN TEMPERATURES (°F)
   Mean..... 261.
   Minimum..... 250.
   Standard Deviation... ___.__
   Number of Tests ..... 3.
   Maximum..... 272.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	___.__				
7	B	Steel-Whl Tandem	___.__				
8	C	Steel-Whl Tandem	___.__				
9	D	Steel-Whl Tandem	___.__				
10	E	Pneumatic-Tired	___.__	___.__			
11	F	Pneumatic-Tired	___.__	___.__			
12	G	Pneumatic-Tired	___.__	___.__			
13	H	Pneumatic-Tired	___.__	___.__			
14	I	Single-Drum Vibr.	___.__		___.__	___	___.__
15	J	Single-Drum Vibr.	___.__		___.__	___	___.__
16	K	Single-Drum Vibr.	___.__		___.__	___	___.__
17	L	Single-Drum Vibr.	___.__		___.__	___	___.__
18	M	Double-Drum Vibr.	15.0		___.__	___	___.__
19	N	Double-Drum Vibr.	10.0		___.__	___	___.__
20	O	Double-Drum Vibr.			___.__	___	___.__
21	P	Double-Drum Vibr.	___.__		___.__	___	___.__
			___.__		___.__	___	___.__
22	Q	Other					

Both 2.5mph-VIBR 3.5mph-STAT

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN	1 VIBR 1 STAT			
23	Roller Code (A-Q)	M	___	___	___
24	Coverages	2.	___.__	___.__	___.__
	INTERMEDIATE				
25	Roller Code (A-Q)	___	___	___	___
26	Coverages	___.__	___.__	___.__	___.__
	FINAL	1 VIBR 1 STAT			
27	Roller Code (A-Q)	N	___	___	___
28	Coverages	2.	___.__	___.__	___.__
29	Air Temperature (°F)	75.	___.__	___.__	___.__
30	Compacted Thickness (In)	___.__	___.__	___.__	___.__
31	Curing Period (Days)	___.__	___.__	___.__	___.__

PREPARER Klemunes EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA CONSTRUCTION QUALITY CONTROL MEASUREMENTS CONSTRUCTION DATA SHEET 9	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [11]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Rut Level-Up	Mill Replacement	Binder Course	Surface Course	Surface Frction Layer
Measurement Method (A, B, C)[1]			A	A	
Rod Depth (Inches)			00	00	
Number of Measurements			02	02	
Average (pcf)			146.2	147.8	
Maximum (pcf)			146.2	149.5	
Minimum (pcf)			146.2	146.1	
Standard Deviation (pcf)					
Layer Number			07	09	

[1]Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACURER OF NUCLEAR DENSITY GAUGE TROXLER

3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3440

4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 16505

5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION 3556

6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2 ___
Profile Index (Inches/Mile) ___
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3 ___
Height of Blanking Band (Inches) ___
Cutoff Height (Inches) ___

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) NO

PREPARER KEMMUES EMPLOYER SHRP/FHWA DATE 11/5/91

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [11]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
0+00	0 3 7 11 14	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	4.1 4.4 4.4 4.5 4.0	— — . — — — . — — — . — — — . — — — . —
0+50	0 3 7 11 14	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	4.0 4.0 4.7 4.7 4.8	— — . — — — . — — — . — — — . — — — . —
1+00	0 3 7 11 14	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	4.3 4.7 4.3 4.7 4.3	— — . — — — . — — — . — — — . — — — . —
1+50	0 2 7 10 14	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	3.7 5.0 4.3 4.4 4.1	— — . — — — . — — — . — — — . — — — . —
2+00	0 3 7 10 14	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	4.1 4.6 4.5 5.0 4.7	— — . — — — . — — — . — — — . — — — . —
2+50	0 3 7 10 14	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	4.1 5.0 4.7 5.1 5.0	— — . — — — . — — — . — — — . — — — . —
3+00	0 3 7 10 14	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	— — . — — — . — — — . — — — . — — — . —	4.0 4.8 4.7 5.1 5.0	— — . — — — . — — — . — — — . — — — . —
LAYER NUMBER		— —	— —	— —	— 9	— —

PREPARER Klemmes EMPLOYER SHRP/EHNG DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA LAYER THICKNESS MEASUREMENTS CONSTRUCTION DATA SHEET 10	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [11]

LAYER THICKNESS MEASUREMENTS (Inches)

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	RUT LEVEL-UP	MILL REPLACEMENT	BINDER COURSE	SURFACE COURSE	SURFACE FRCTION LAYER
3+50	0 3 7 10 14				4.1 5.0 4.8 5.1 4.7	
4+00	0 3 6 9 12				4.2 5.5 5.0 5.1 5.0	
4+50	0 3 7 10 14				4.3 5.5 5.0 5.2 4.8	
5+00	0 3 7 10 14				4.0 5.3 5.1 5.1 4.8	
_+__						
_+__						
_+__						
LAYER NUMBER					9	

PREPARER Klemmes EMPLOYER SHRP/FHWA DATE 1-14-92

LTPP-SPS CONSTRUCTION DATA MISCELLANIOUS CONSTRUCTION NOTES AND COMMENTS CONSTRUCTION DATA SHEET 11	* STATE CODE [30] * SPS PROJECT CODE [05] * TEST SECTION NO. [11]

Provide any miscellanious comments and notes concering construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indicatetion of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

Rod and level surveys completed before and after construction. Measurements were not taken between lifts

PREPARER John A Kennedy EMPLOYER SHRP/FHWA DATE 1-14-92

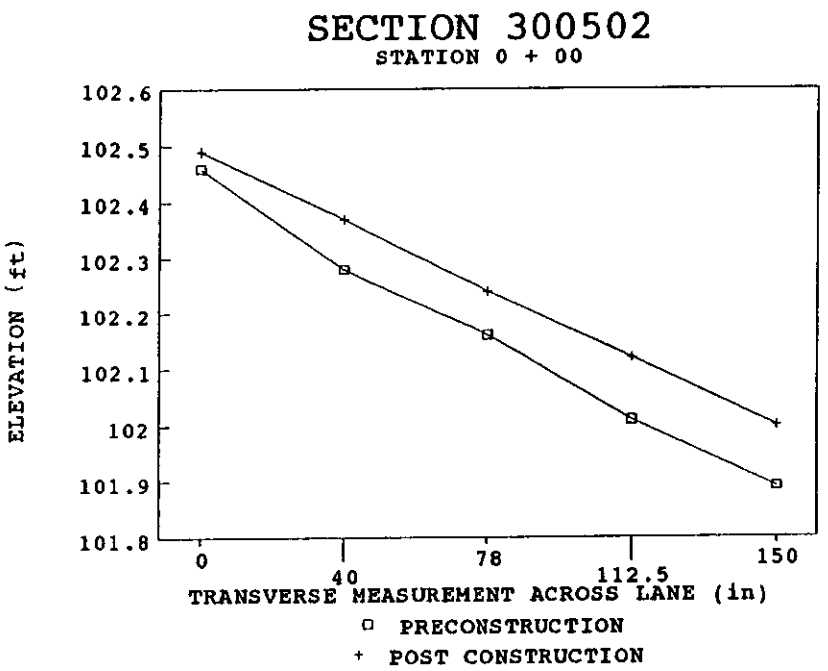
APPENDIX B

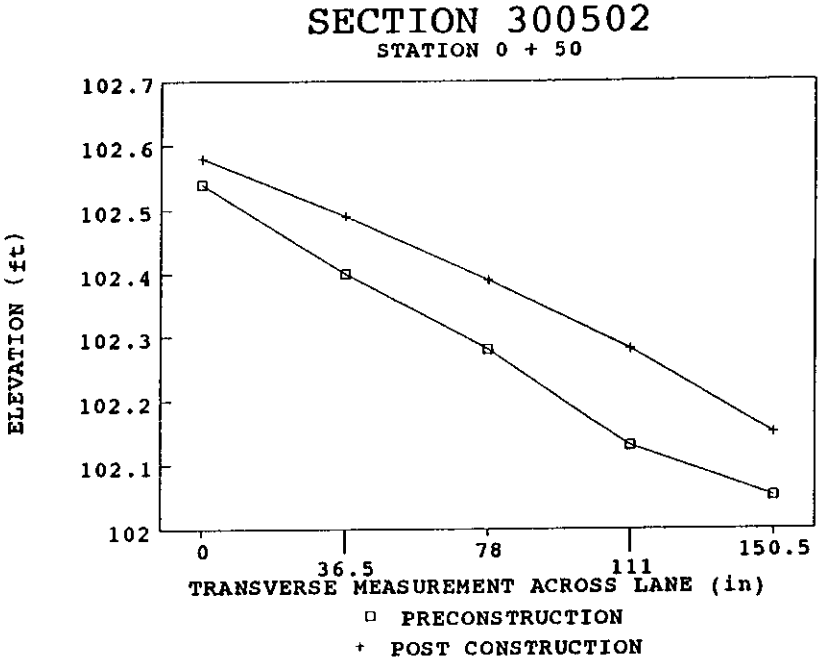
7.73 = HI PRECON
7.95 = HI POSTCON

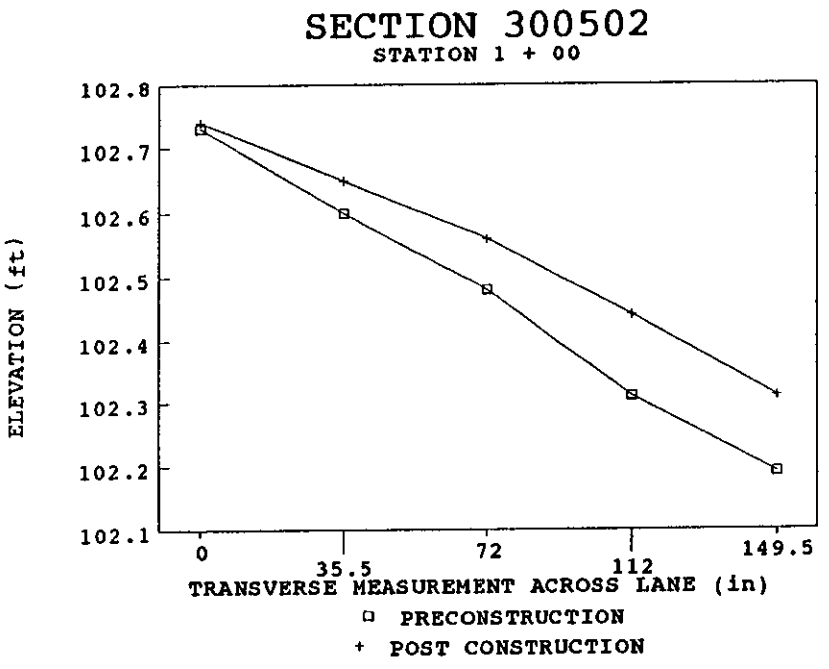
ASSUMED ELEVATION OF 100.00 FT

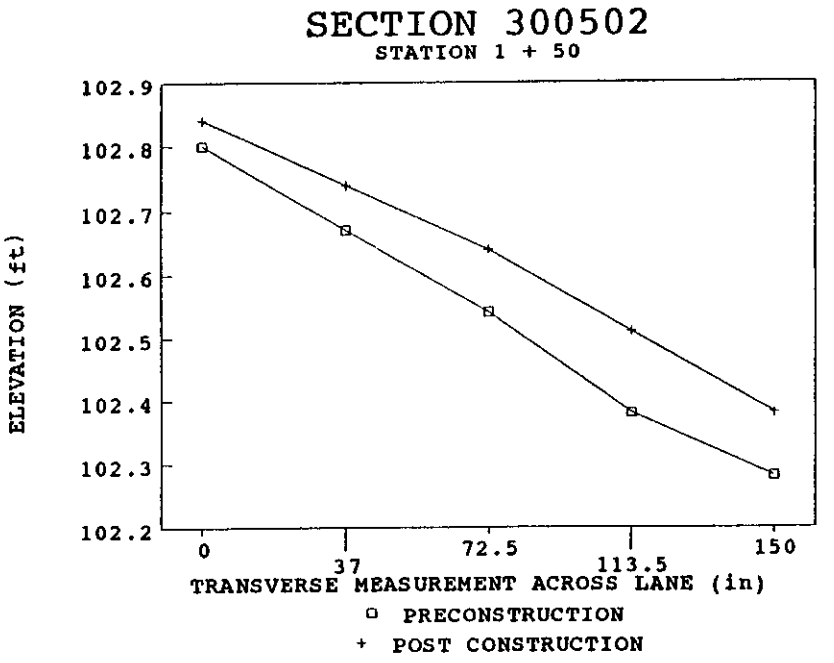
SPS-5 ROD AND LEVEL CALC. BIG TIMBER, MONTANA
SECTION 300502 MINIMUM PREPARATION 2 INCH VIRGIN

STATION	LANE TO EDGE		ELEVATION	DIFF THICK	OUTER WHEEL PATH		ELEVATION	DIFF THICK	CENTER LINE		ELEVATION	DIFF THICK	IN WHEEL PATH		ELEVATION	DIFF THICK	LANE TO LANE		ELEVATION	DIFF THICK
	(in)	R&L	(ft)	(inches)	(inches)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)
0+00	0.00	0.00			40.00				78.00				112.50				150.00			
PRECON		5.27	102.46	2.28		5.45	102.28	1.08		5.57	102.16	0.96		5.72	102.01	1.32		5.84	101.89	1.32
POSTCON		5.46	102.49			5.58	102.37			5.71	102.24			5.83	102.12			5.95	102.00	
0+50	0.00				36.50				78.00				111.00				150.50			
PRECON		5.19	102.54	2.16		5.33	102.40	1.08		5.45	102.28	1.32		5.80	102.13	1.80		5.88	102.05	1.20
POSTCON		5.37	102.58			5.46	102.49			5.56	102.39			5.67	102.29			5.80	102.15	
1+00	0.00				35.50				72.00				112.00				149.50			
PRECON		5.00	102.73	2.52		5.13	102.60	0.80		5.25	102.48	0.96		5.42	102.31	1.56		5.54	102.19	1.44
POSTCON		5.21	102.74			5.30	102.65			5.39	102.56			5.51	102.44			5.64	102.31	
1+50	0.00				37.00				72.50				113.50				150.00			
PRECON		4.93	102.80	2.16		5.08	102.67	0.84		5.19	102.54	1.20		5.35	102.38	1.56		5.45	102.28	1.20
POSTCON		5.11	102.84			5.21	102.74			5.31	102.64			5.44	102.51			5.57	102.38	
2+00	0.00				39.00				75.50				112.00				149.00			
PRECON		4.82	102.91	2.28		4.96	102.77	1.08		5.08	102.65	1.20		5.21	102.52	1.44		5.32	102.41	1.08
POSTCON		4.98	102.97			5.09	102.86			5.20	102.75			5.31	102.64			5.45	102.50	
2+50	0.00				46.00				81.50				114.50				151.00			
PRECON		4.65	103.08	1.80		4.82	102.91	1.32		4.92	102.81	1.20		5.05	102.68	1.44		5.13	102.60	0.96
POSTCON		4.80	103.15			4.93	103.02			5.04	102.91			5.15	102.80			5.27	102.68	
3+00	0.00				36.50				82.00				114.00				147.50			
PRECON		4.48	103.25	1.92		4.81	103.12	1.08		4.75	102.98	1.20		4.87	102.86	1.32		4.94	102.79	0.96
POSTCON		4.64	103.31			4.74	103.21			4.87	103.08			4.98	102.97			5.08	102.87	
3+50	0.00				37.50				74.50				111.50				148.00			
PRECON		4.26	103.47	1.92		4.39	103.34	1.08		4.50	103.23	1.20		4.64	103.09	1.56		4.71	103.02	0.96
POSTCON		4.42	103.53			4.52	103.43			4.62	103.33			4.73	103.22			4.85	103.10	
4+00	0.00				37.00				77.00				111.00				147.50			
PRECON		4.20	103.53	-1.92		4.17	103.56	1.08		4.27	103.46	1.08		4.41	103.32	1.56		4.47	103.26	0.96
POSTCON		4.04	103.91			4.30	103.85			4.40	103.55			4.50	103.45			4.61	103.34	
4+50	0.00				38.50				79.00				113.50				149.50			
PRECON		3.99	103.74	1.68		4.07	103.66	0.84		4.15	103.58	1.08		4.25	103.48	1.20		4.31	103.42	1.08
POSTCON		4.13	103.92			4.22	103.73			4.28	103.67			4.37	103.58			4.44	103.51	
5+00	0.00				39.50				78.50				113.00				149.50			
PRECON		3.86	103.87	2.16		3.94	103.79	0.84		4.00	103.73	1.08		4.07	103.66	1.32		4.12	103.61	1.20
POSTCON		4.04	103.91			4.09	103.86			4.13	103.82			4.19	103.77			4.24	103.71	

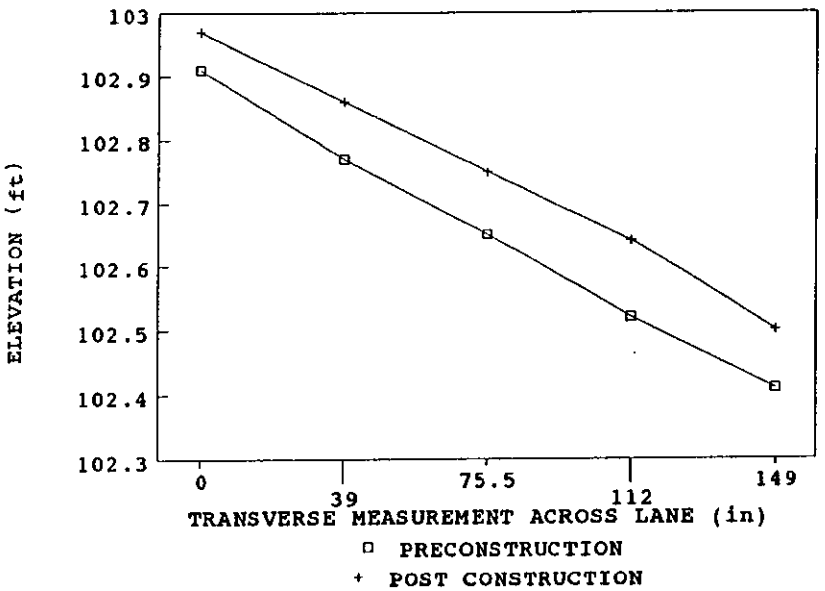

SECTION 300502
STATION 0 + 00
ELEVATION (ft)
102.6
102.5
102.4
102.3
102.2
102.1
102
101.9
101.8
0
40
78
112.5
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300502
STATION 0 + 50
ELEVATION (ft)
102.7
102.6
102.5
102.4
102.3
102.2
102.1
102
0
36.5
78
111
150.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

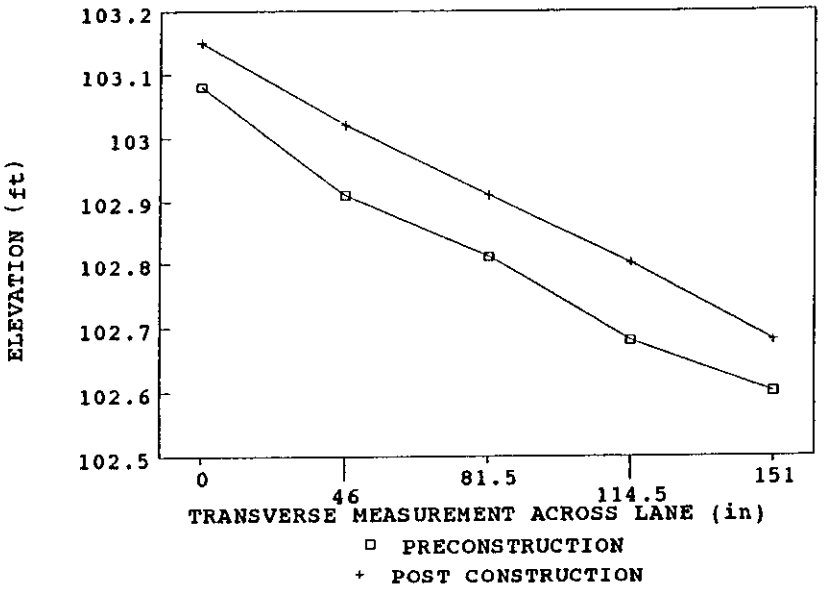

SECTION 300502
STATION 1 + 00
ELEVATION (ft)
102.8
102.7
102.6
102.5
102.4
102.3
102.2
102.1
0
35.5
72
112
149.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300502
STATION 1 + 50
ELEVATION (ft)
102.9
102.8
102.7
102.6
102.5
102.4
102.3
102.2
0
37
72.5
113.5
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

SECTION 300502
STATION 2 + 00



SECTION 300502
STATION 2 + 50



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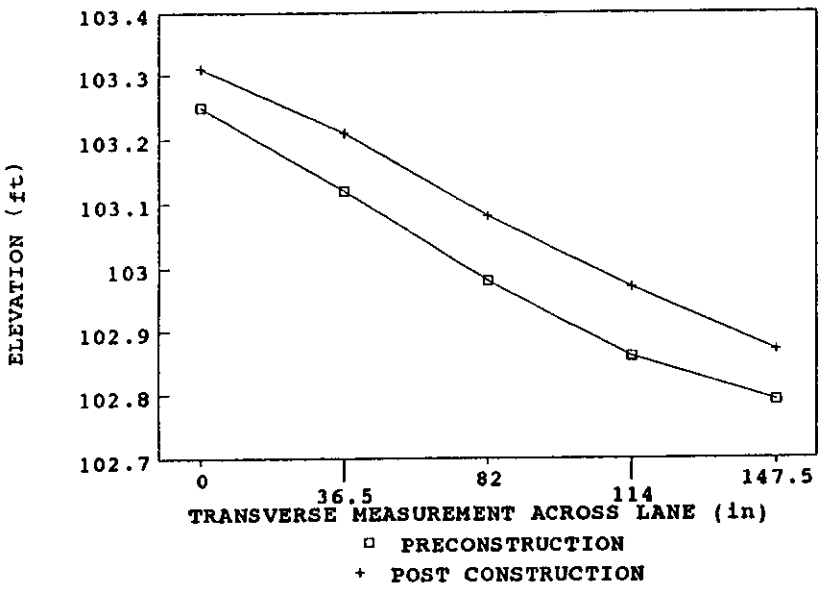
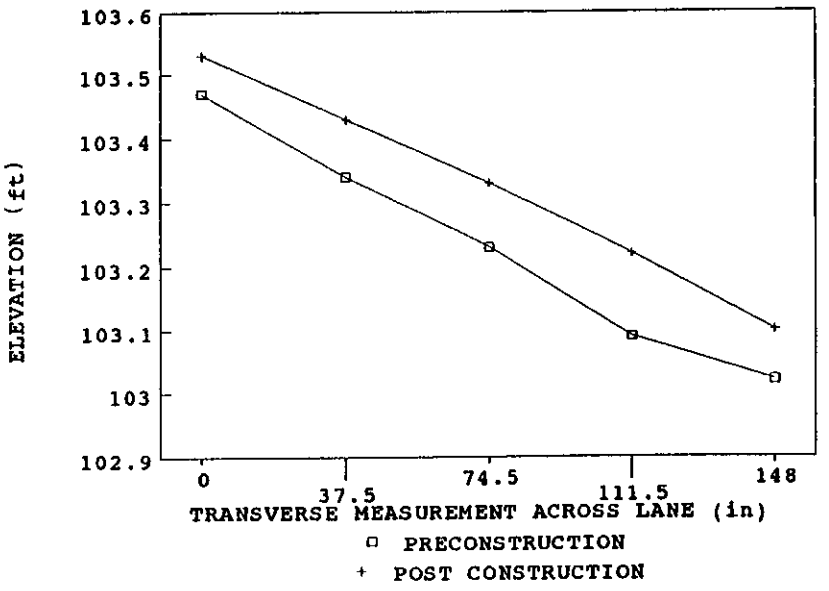
STATION 3 + 00

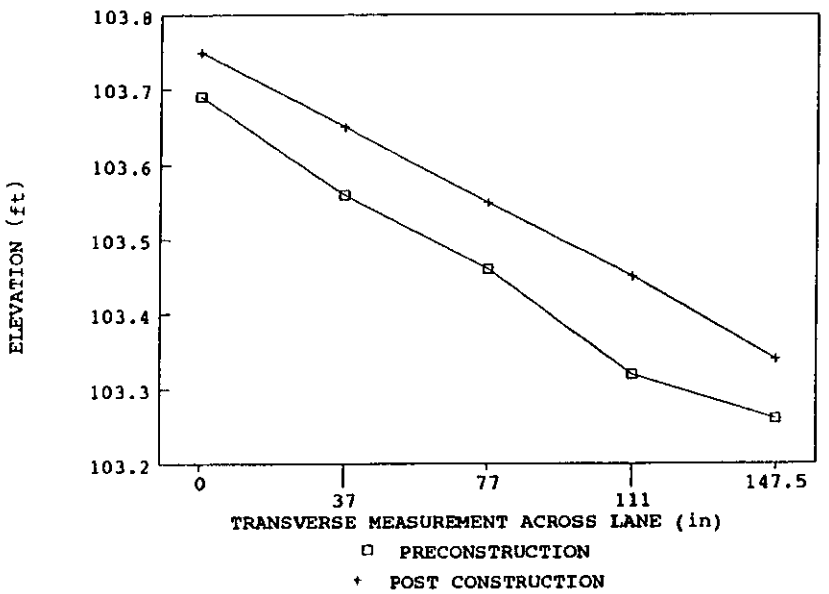


SECTION 300502
STATION 3 + 50



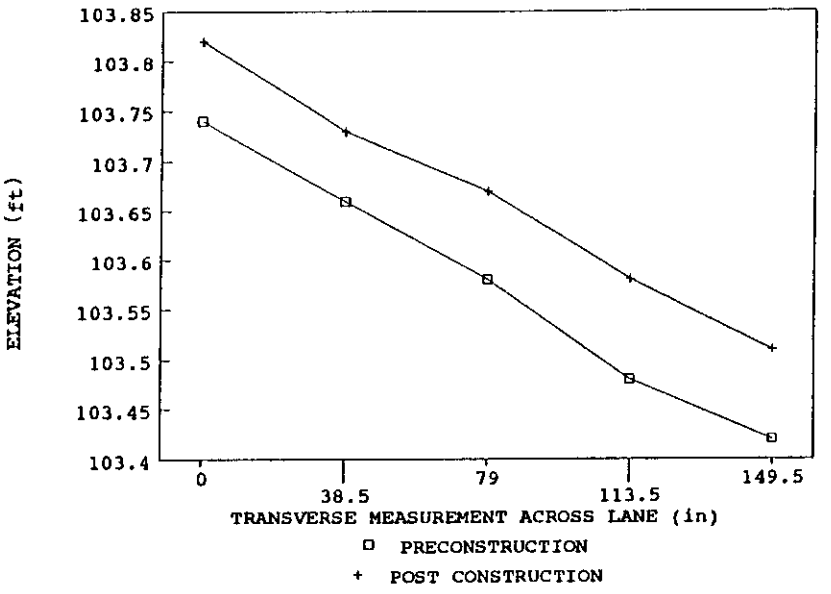
SECTION 300502

STATION 4 + 00



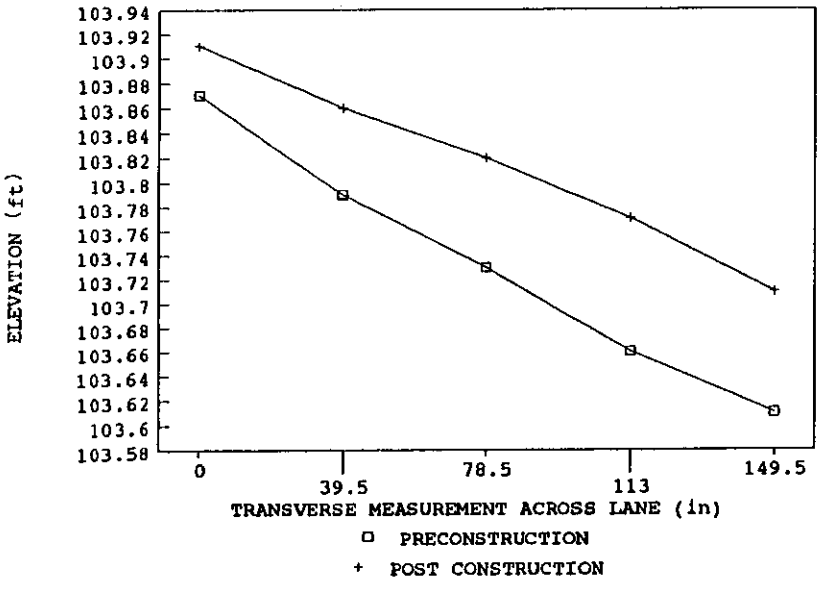
SECTION 300502

STATION 4 + 50



SECTION 300502

STATION 5 + 00

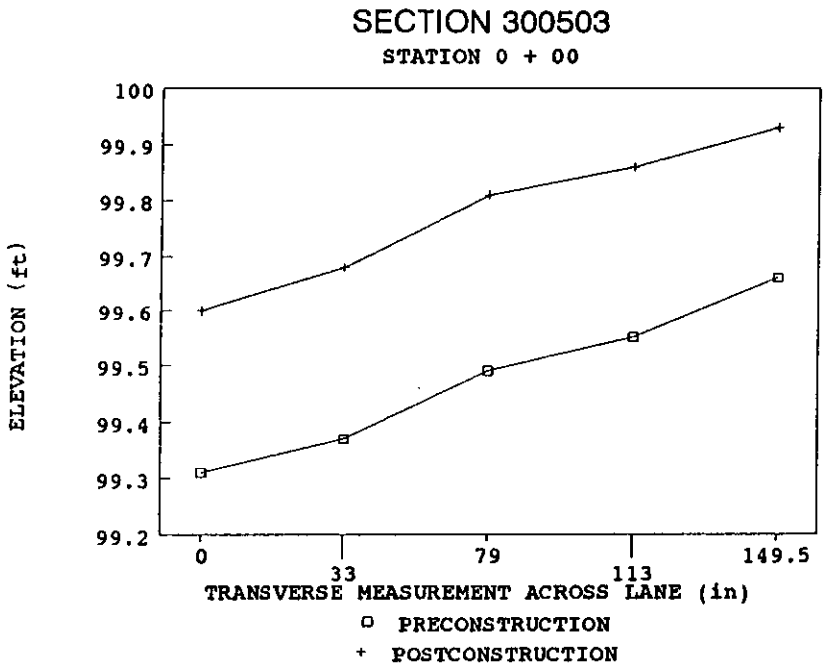


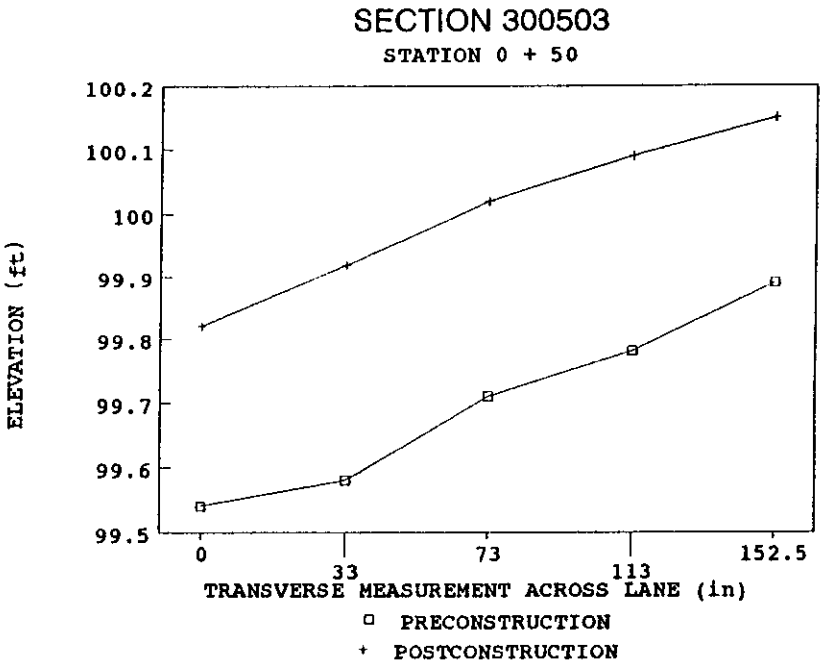
5.51 = HI PRECON
5.85 = HI POSTCON

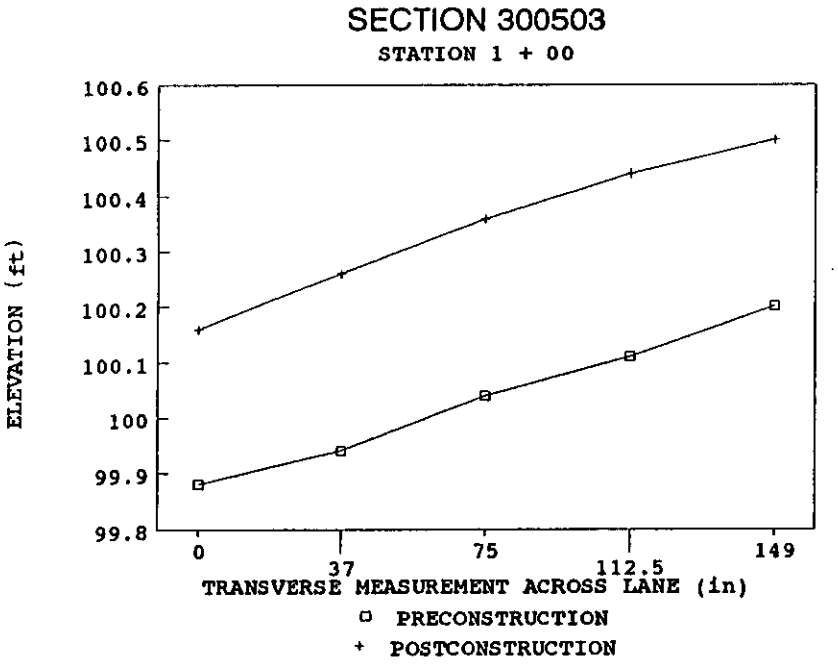
ASSUMED ELEVATION OF 100.00 FT

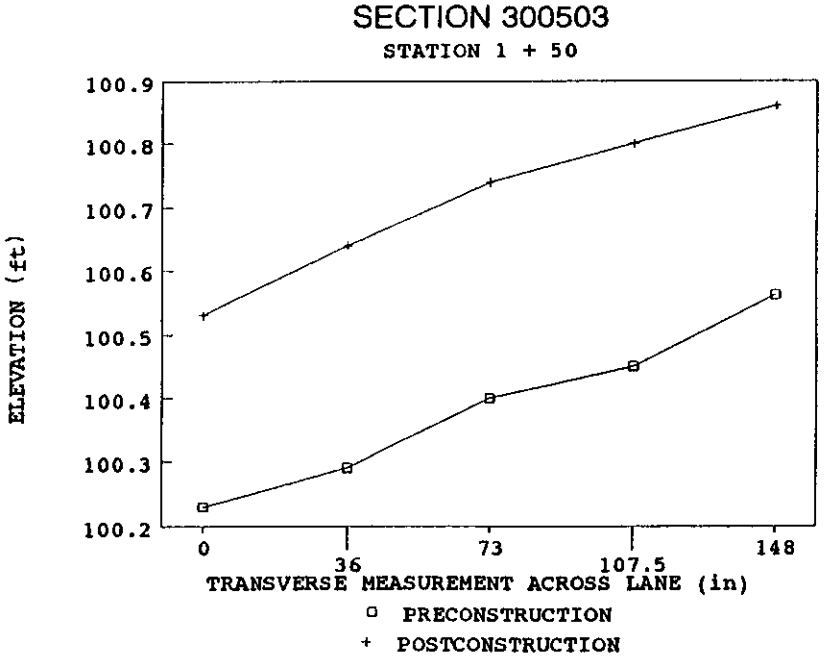
SPS-5 ROD AND LEVEL CALC. BIG TIMBER, MONTANA
SECTION 300503 MINIMUM PREPARATION, 5 INCH RECYCLED

STATION	LANE TO LANE		ELEVATION	DIFF THICK	OUTER WHEEL PATH		ELEVATION	DIFF THICK	CENTER LINE		ELEVATION	DIFF THICK	IN WHEEL PATH		ELEVATION	DIFF THICK	LANE TO LANE		ELEVATION	DIFF THICK
	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)
0+00	0.00				33.00				79.00				113.00				149.50			
PRECON		6.20	99.31	3.48		6.14	99.37	3.72		6.02	99.49	3.84		5.96	99.55	3.72		5.85	99.86	3.24
POSTCON		6.05	99.60			5.97	99.68			5.84	99.81			5.79	99.86			5.72	99.93	
0+50	0.00				33.00				73.00				113.00				152.50			
PRECON		5.97	99.54	3.36		5.93	99.58	4.08		5.80	99.71	3.72		5.73	99.78	3.72		5.62	99.89	3.12
POSTCON		5.83	99.82			5.73	99.92			5.63	100.02			5.56	100.09			5.50	100.15	
1+00	0.00				37.00				75.00				112.50				149.00			
PRECON		5.63	99.88	3.36		5.57	99.94	3.84		5.47	100.04	3.84		5.40	100.11	3.96		5.31	100.20	3.60
POSTCON		5.49	100.18			5.39	100.26			5.29	100.36			5.21	100.44			5.15	100.50	
1+50	0.00				36.00				73.00				107.50				148.00			
PRECON		5.28	100.23	3.60		5.22	100.29	4.20		5.11	100.40	4.08		5.06	100.45	4.20		4.95	100.56	3.60
POSTCON		5.12	100.53			5.01	100.64			4.91	100.74			4.85	100.80			4.79	100.86	
2+00	0.00				37.50				73.00				112.00				149.00			
PRECON		5.06	100.45	3.48		4.99	100.52	3.96		4.89	100.62	3.84		4.83	100.68	4.20		4.74	100.77	3.96
POSTCON		4.93	100.72			4.90	100.85			4.71	100.94			4.62	101.03			4.55	101.10	
2+50	0.00				34.00				73.00				111.00				147.00			
PRECON		4.90	100.81	3.72		4.84	100.87	4.32		4.74	100.77	4.32		4.68	100.83	4.56		4.58	100.93	4.20
POSTCON		4.73	100.92			4.62	101.03			4.52	101.13			4.44	101.21			4.37	101.28	
3+00	0.00				35.00				74.50				112.00				148.50			
PRECON		4.68	100.83	3.84		4.63	100.88	4.56		4.50	101.01	4.20		4.44	101.07	4.56		4.34	101.17	4.20
POSTCON		4.50	101.15			4.39	101.26			4.29	101.36			4.20	101.45			4.13	101.52	
3+50	0.00				34.00				74.00				111.00				150.00			
PRECON		4.45	101.06	3.84		4.39	101.12	4.56		4.27	101.24	4.20		4.21	101.30	4.44		4.10	101.41	3.96
POSTCON		4.27	101.36			4.17	101.48			4.06	101.59			3.98	101.67			3.91	101.74	
4+00	0.00				39.00				80.00				111.50				151.50			
PRECON		4.17	101.34	3.72		4.10	101.41	4.20		4.00	101.51	4.44		3.95	101.56	4.68		3.85	101.66	4.32
POSTCON		4.00	101.65			3.89	101.76			3.77	101.88			3.70	101.95			3.63	102.02	
4+50	0.00				33.50				75.50				112.00				152.00			
PRECON		3.92	101.59	3.24		3.85	101.66	3.84		3.75	101.76	4.08		3.69	101.82	4.32		3.59	101.92	3.96
POSTCON		3.79	101.86			3.67	101.98			3.55	102.10			3.47	102.18			3.40	102.25	
5+00	0.00				33.00				74.00				112.00				151.00			
PRECON		3.74	101.77	3.60		3.67	101.84	3.96		3.57	101.94	4.08		3.50	102.01	4.32		3.39	102.12	3.96
POSTCON		3.58	102.07			3.49	102.17			3.37	102.28			3.29	102.37			3.20	102.45	


SECTION 300503
STATION 0 + 00
ELEVATION (ft)
100
99.9
99.8
99.7
99.6
99.5
99.4
99.3
99.2
0
33
79
113
149.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION

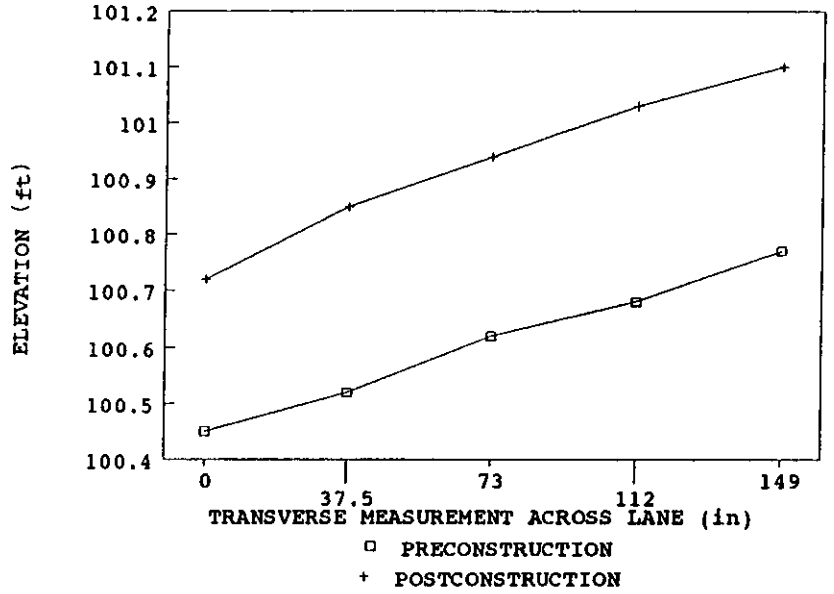

SECTION 300503
STATION 0 + 50
ELEVATION (ft)
100.2
100.1
100
99.9
99.8
99.7
99.6
99.5
0
33
73
113
152.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION


SECTION 300503
STATION 1 + 00
ELEVATION (ft)
100.6
100.5
100.4
100.3
100.2
100.1
100
99.9
99.8
0
37
75
112.5
149
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION


SECTION 300503
STATION 1 + 50
ELEVATION (ft)
100.9
100.8
100.7
100.6
100.5
100.4
100.3
100.2
0
36
73
107.5
148
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION

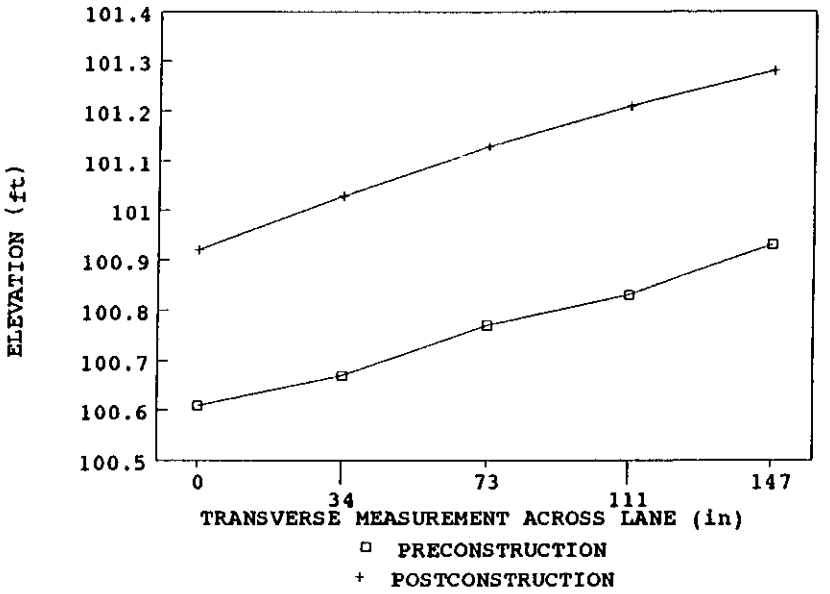
SECTION 300503

STATION 2 + 00



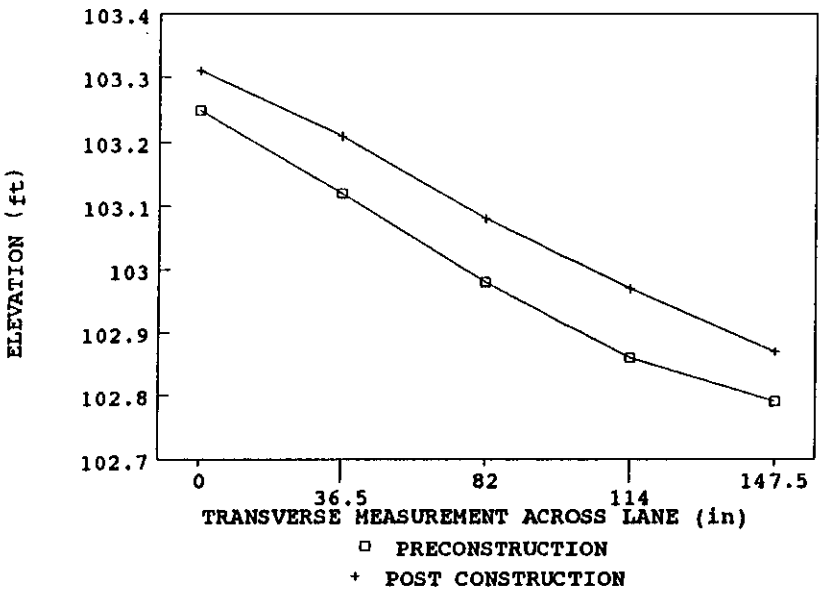
SECTION 300503

STATION 2 + 50



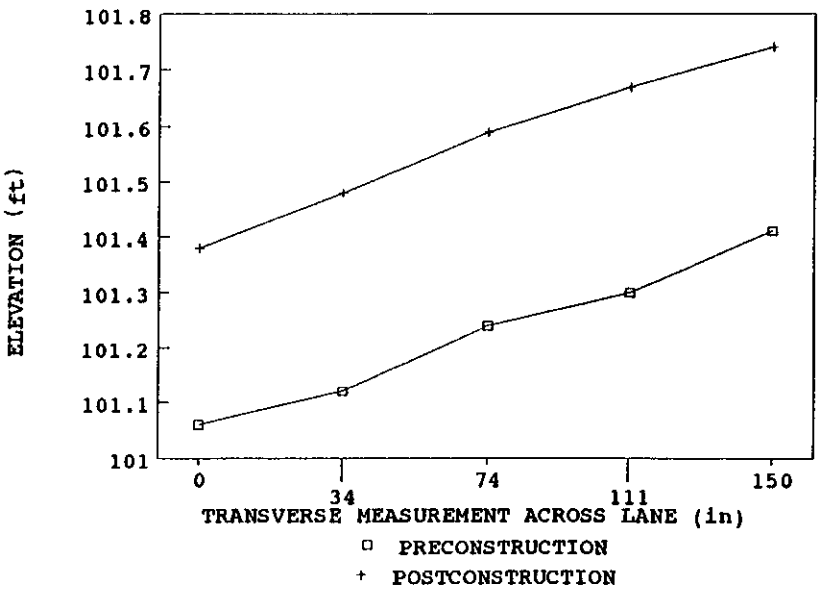
SECTION 300502

STATION 3 + 00



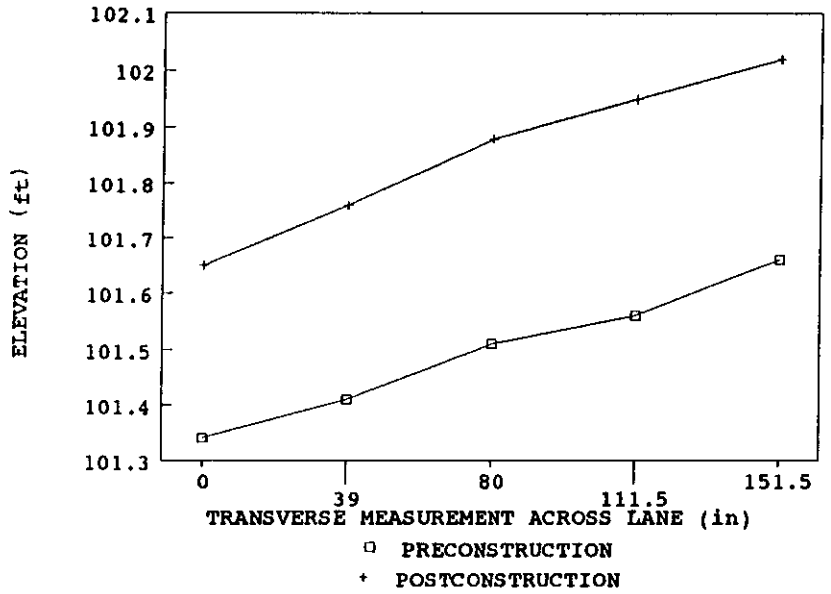
SECTION 300503

STATION 3 + 50



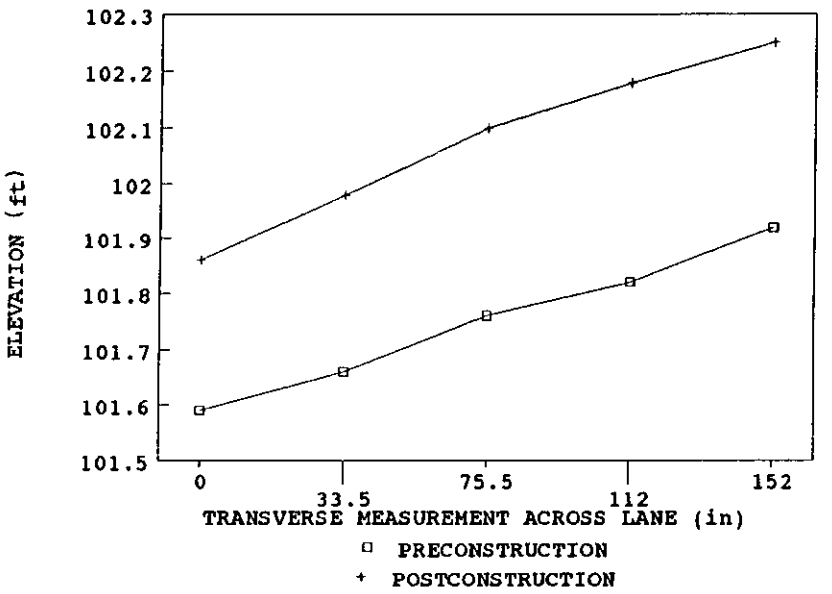
SECTION 300503

STATION 4 + 00



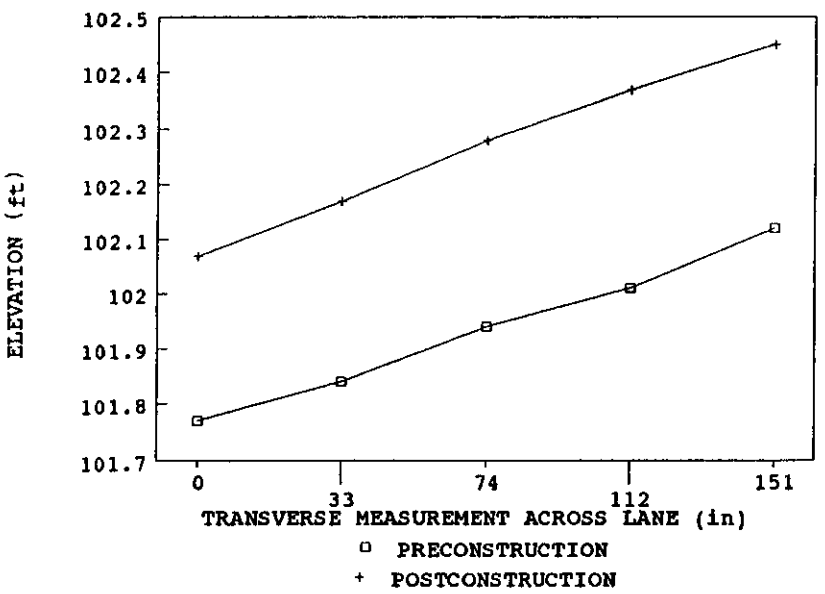
SECTION 300503

STATION 4 + 50



SECTION 300503

STATION 5 + 00

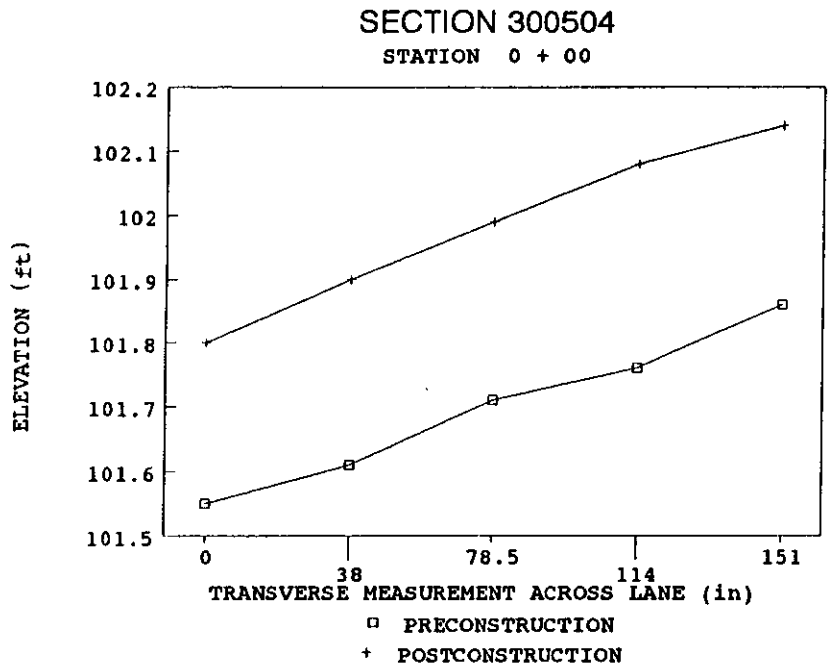


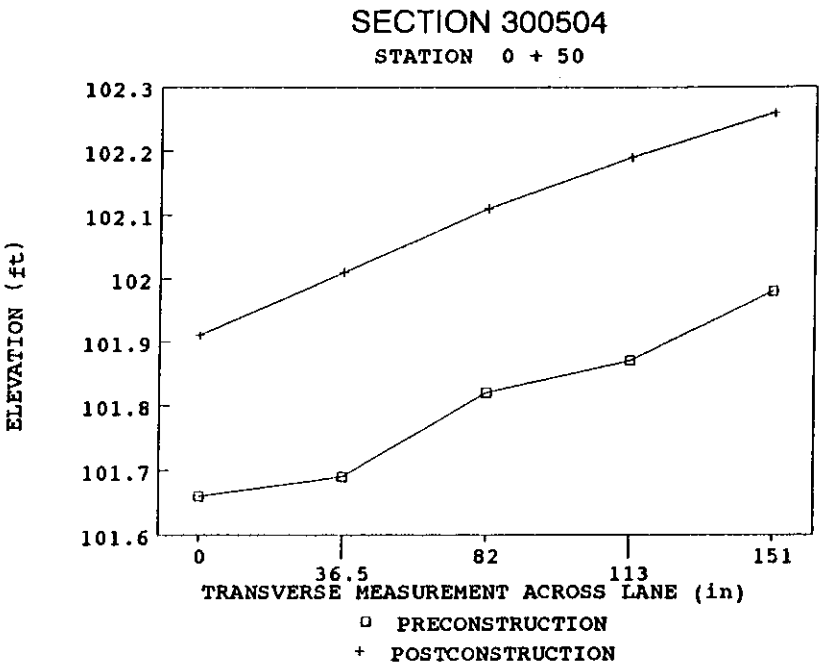
7.33 = HI PRECON
7.51 = HI POSTCON

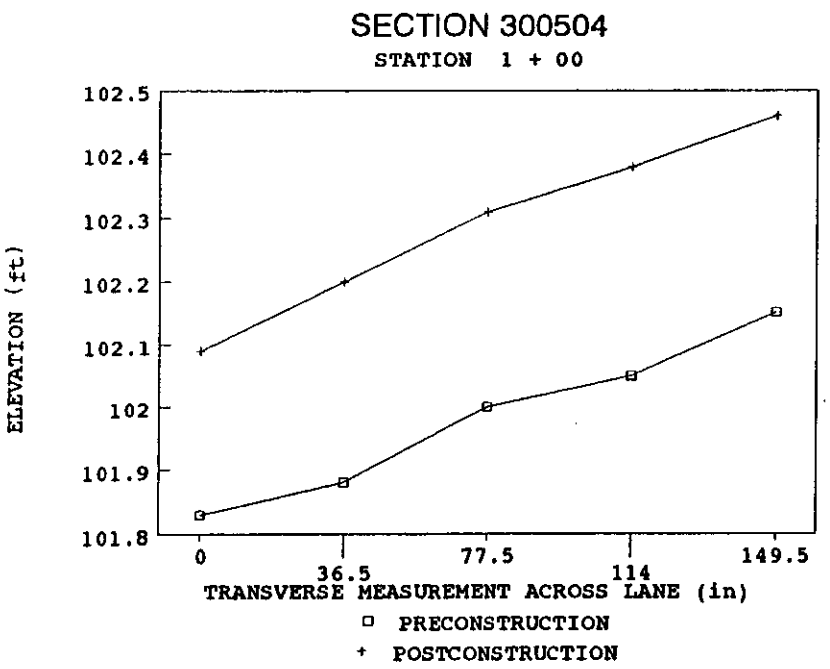
ASSUMED ELEVATION OF 100.00 FT

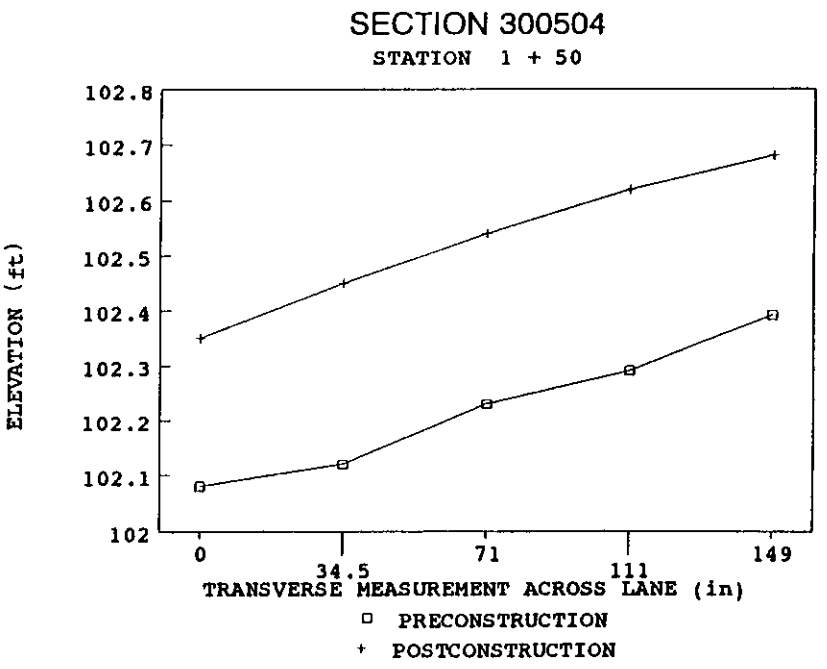
SPS--5 ROD AND LEVEL CALC. BIG TIMBER, MONTANA
SECTION 300504 MINIMUM PREPARATION 5 INCH VIRGIN

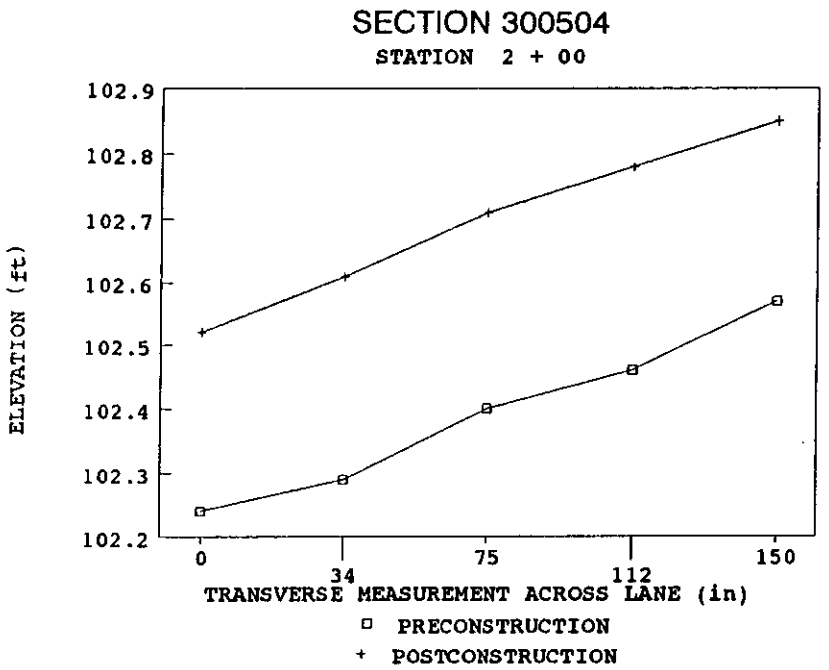
STATION	LANE TO EDGE		ELEVATION	DIFF THICK	OUTER WHEEL PATH		ELEVATION	DIFF THICK	CENTER LINE		ELEVATION	DIFF THICK	IN WHEEL PATH		ELEVATION	DIFF THICK	LANE TO LANE		ELEVATION	DIFF THICK
	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)
0+00	0.00				39.00				78.50				114.00				151.00			
PRECON		5.78	101.55	3.00		5.72	101.61	3.48		5.62	101.71	3.36		5.57	101.76	5.04		5.47	101.86	3.36
POSTCON		5.71	101.80			5.61	101.90			5.52	101.99			5.33	102.18			5.37	102.14	
0+50	0.00				38.50				82.00				113.00				151.00			
PRECON		5.67	101.88	3.00		5.64	101.69	3.84		5.51	101.82	3.48		5.46	101.87	3.84		5.35	101.98	3.36
POSTCON		5.60	101.91			5.50	102.01			5.40	102.11			5.32	102.19			5.25	102.28	
1+00	0.00				36.50				77.50				114.00				149.50			
PRECON		5.50	101.83	3.12		5.45	101.88	3.84		5.33	102.00	3.72		5.28	102.05	3.96		5.18	102.15	3.72
POSTCON		5.42	102.09			5.31	102.20			5.20	102.31			5.13	102.38			5.05	102.46	
1+50	0.00				34.50				71.00				111.00				149.00			
PRECON		5.25	102.08	3.24		5.21	102.12	3.96		5.10	102.23	3.72		5.04	102.29	3.96		4.94	102.39	3.48
POSTCON		5.16	102.35			5.06	102.45			4.97	102.54			4.89	102.62			4.83	102.68	
2+00	0.00				34.00				75.00				112.00				150.00			
PRECON		5.09	102.24	3.00		5.04	102.29	3.84		4.93	102.40	3.72		4.87	102.46	3.84		4.76	102.57	3.36
POSTCON		4.99	102.52			4.90	102.61			4.80	102.71			4.73	102.78			4.66	102.85	
2+50	0.00				38.00				78.00				111.00				152.50			
PRECON		4.87	102.46	3.24		4.81	102.52	3.84		4.70	102.63	3.60		4.65	102.68	3.84		4.54	102.79	3.36
POSTCON		4.78	102.73			4.67	102.84			4.58	102.93			4.51	103.00			4.44	103.07	
3+00	0.00				34.50				76.50				113.00				152.50			
PRECON		4.65	102.68	2.88		4.60	102.73	3.48		4.50	102.83	3.60		4.44	102.89	3.72		4.34	102.99	3.24
POSTCON		4.59	102.92			4.49	103.02			4.38	103.13			4.31	103.20			4.25	103.26	
3+50	0.00				39.00				77.00				111.00				149.00			
PRECON		4.44	102.89	3.24		4.37	102.96	3.60		4.27	103.06	3.60		4.22	103.11	3.84		4.12	103.21	3.60
POSTCON		4.35	103.16			4.25	103.26			4.15	103.36			4.08	103.43			4.00	103.51	
4+00	0.00				32.50				71.50				111.00				149.00			
PRECON		4.21	103.12	3.24		4.26	103.07	4.92		4.05	103.28	3.60		3.99	103.34	3.84		3.89	103.44	3.60
POSTCON		4.12	103.39			4.03	103.48			3.93	103.58			3.85	103.66			3.77	103.74	
4+50	0.00				34.50				73.50				112.00				151.50			
PRECON		4.00	103.33	3.24		3.95	103.38	3.72		3.84	103.49	3.48		3.78	103.55	3.84		3.67	103.66	3.36
POSTCON		3.91	103.60			3.82	103.69			3.73	103.78			3.64	103.87			3.57	103.94	
5+00	0.00				35.00				73.00				110.00				151.00			
PRECON		3.83	103.50	3.48		3.79	103.54	4.08		3.54	103.79	0.72		3.82	103.71	4.20		3.51	103.82	3.72
POSTCON		3.72	103.79			3.63	103.88			3.56	103.95			3.45	104.06			3.39	104.13	

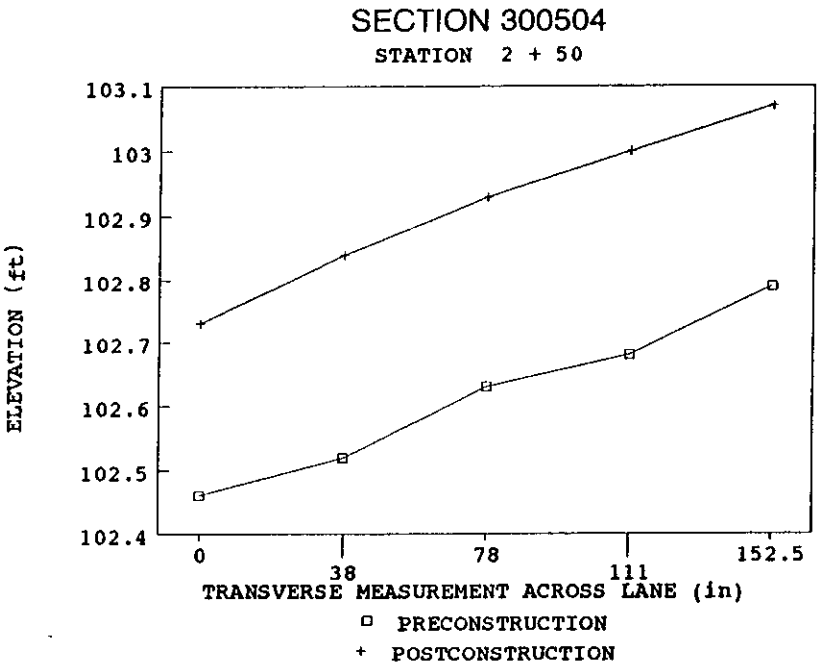

SECTION 300504
STATION 0 + 00
ELEVATION (ft)
102.2
102.1
102
101.9
101.8
101.7
101.6
101.5
0
38
78.5
114
151
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION

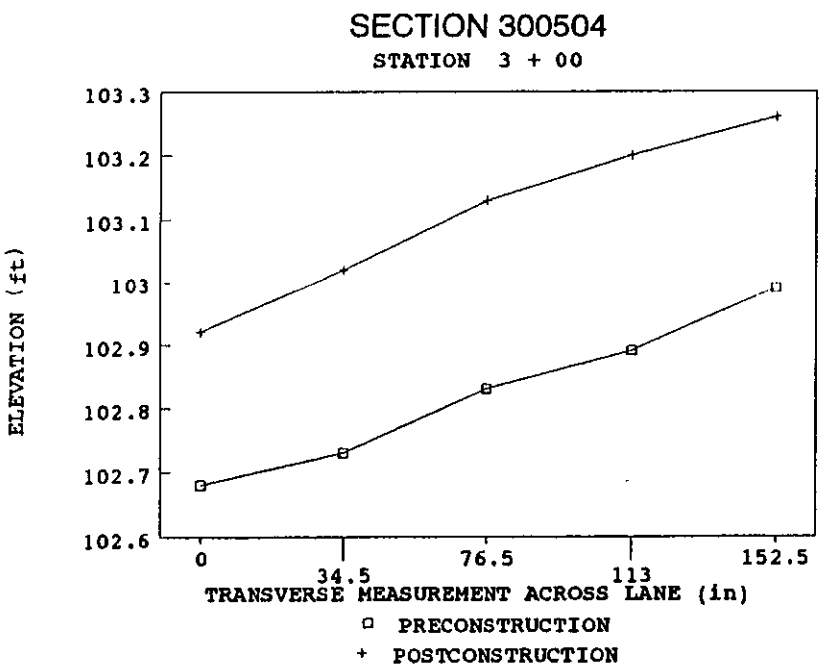

SECTION 300504
STATION 0 + 50
ELEVATION (ft)
102.3
102.2
102.1
102
101.9
101.8
101.7
101.6
0
36.5
82
113
151
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION

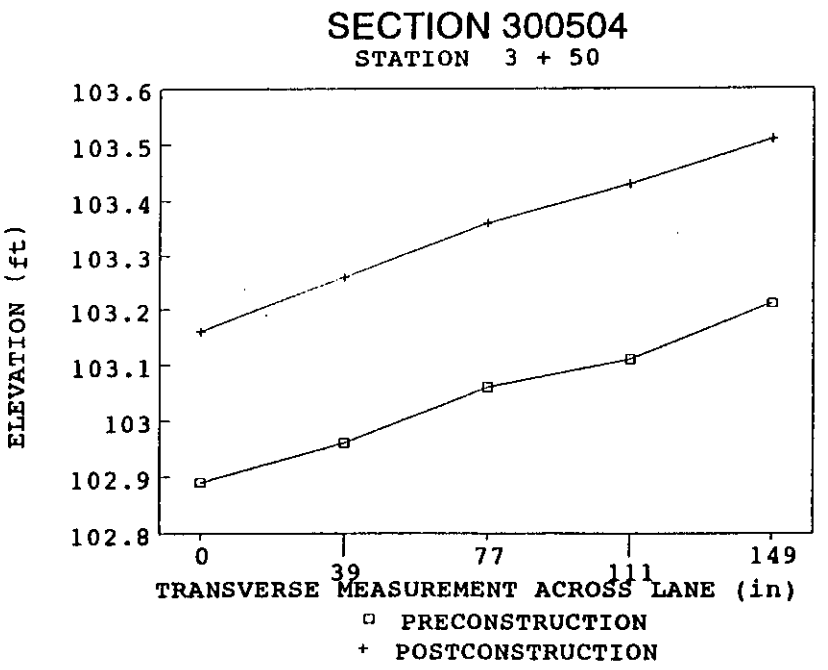

SECTION 300504
STATION 1 + 00
ELEVATION (ft)
102.5
102.4
102.3
102.2
102.1
102
101.9
101.8
0
36.5
77.5
114
149.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION


SECTION 300504
STATION 1 + 50
ELEVATION (ft)
102.8
102.7
102.6
102.5
102.4
102.3
102.2
102.1
102
0
34.5
71
111
149
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION


SECTION 300504
STATION 2 + 00
ELEVATION (ft)
102.9
102.8
102.7
102.6
102.5
102.4
102.3
102.2
0
34
75
112
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION

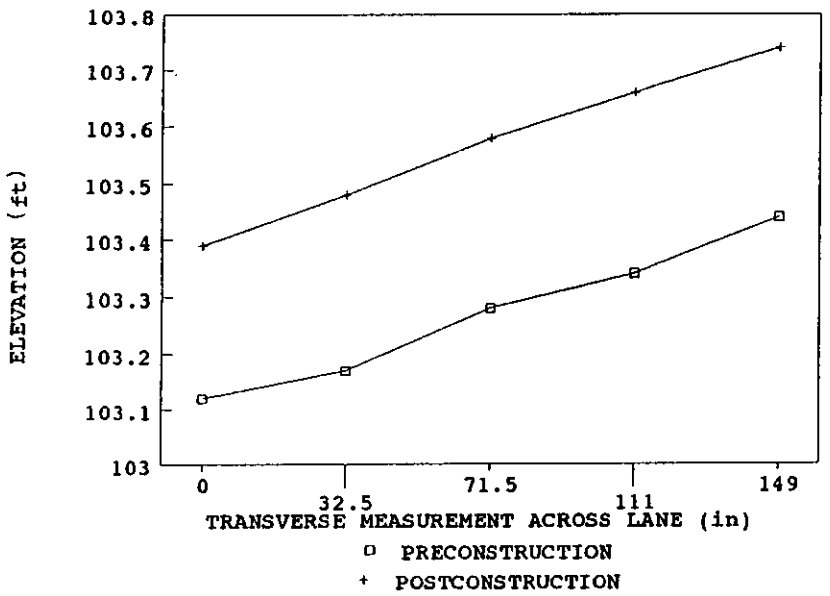

SECTION 300504
STATION 2 + 50
ELEVATION (ft)
103.1
103
102.9
102.8
102.7
102.6
102.5
102.4
0
38
78
111
152.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION


SECTION 300504
STATION 3 + 00
ELEVATION (ft)
103.3
103.2
103.1
103
102.9
102.8
102.7
102.6
0
34.5
76.5
113
152.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION


SECTION 300504
STATION 3 + 50
ELEVATION (ft)
103.6
103.5
103.4
103.3
103.2
103.1
103
102.9
102.8
0
39
77
111
149
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION

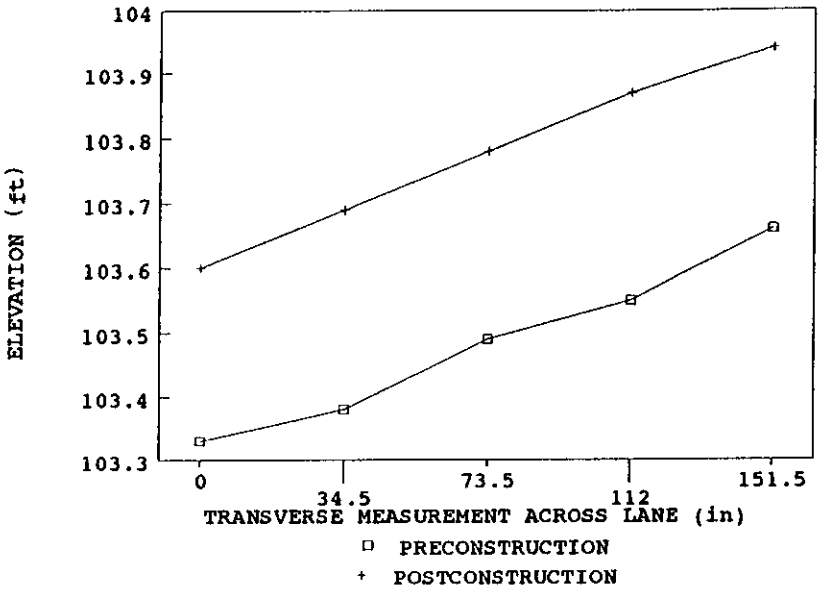
SECTION 300504

STATION 4 + 00



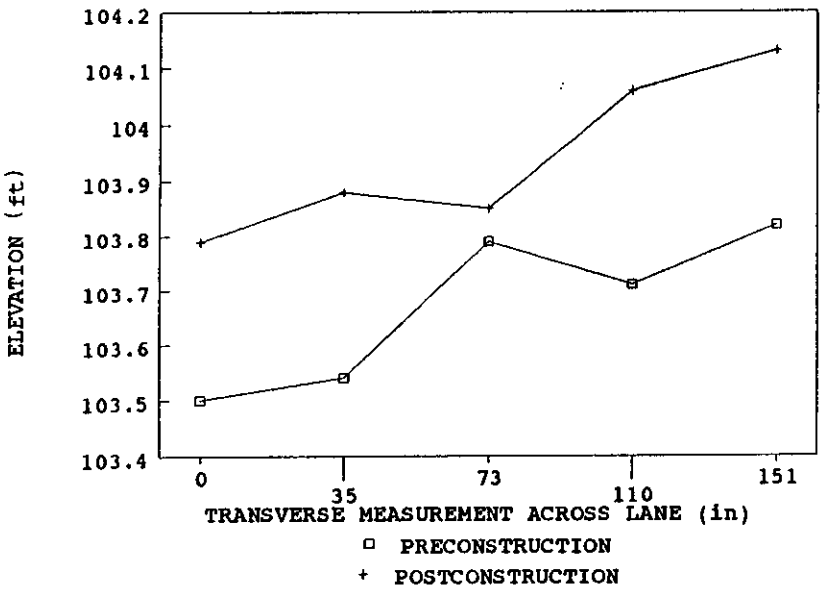
SECTION 300504

STATION 4 + 50



SECTION 300504

STATION 5 + 00

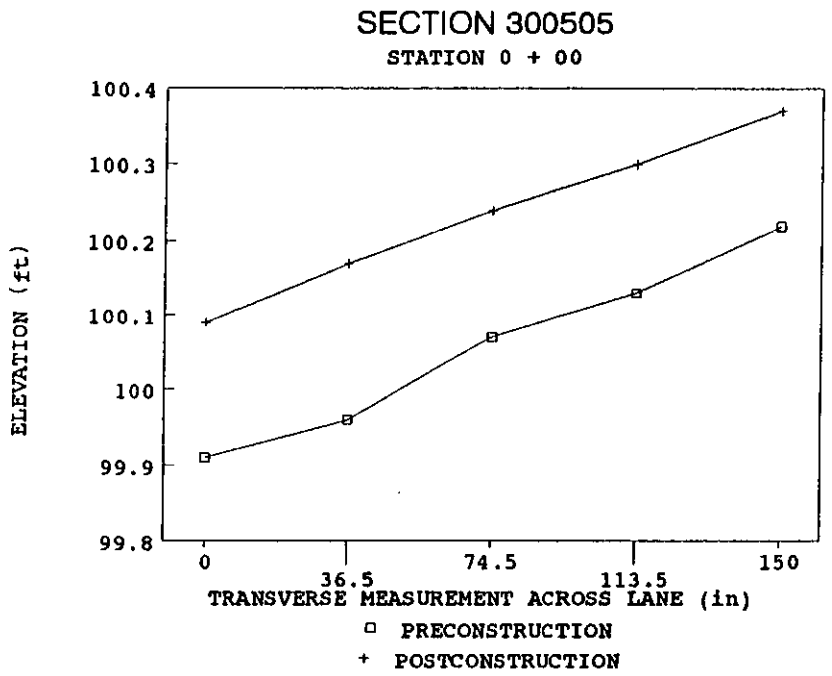


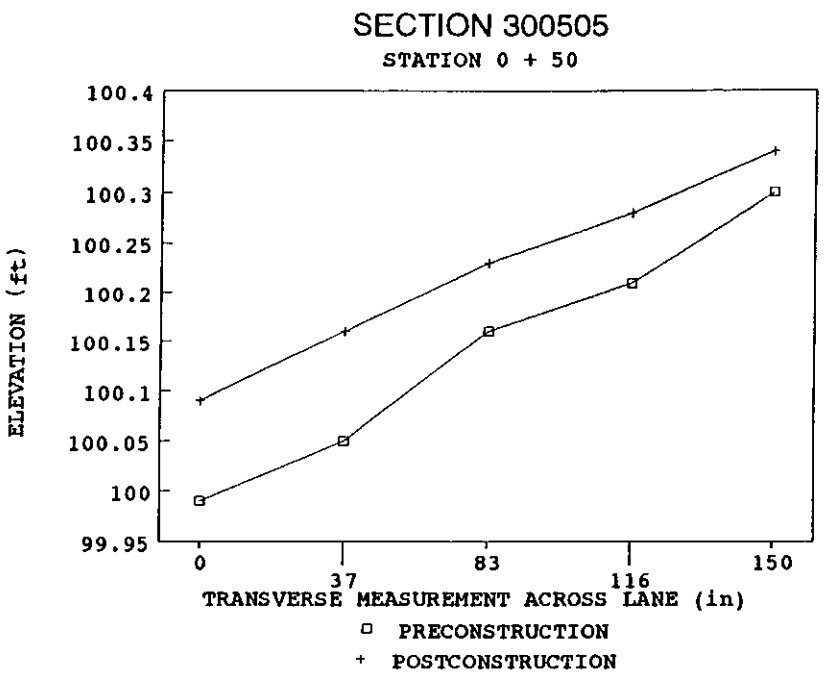
5.22 = HI PRECON
5.22 = HI POSTCON

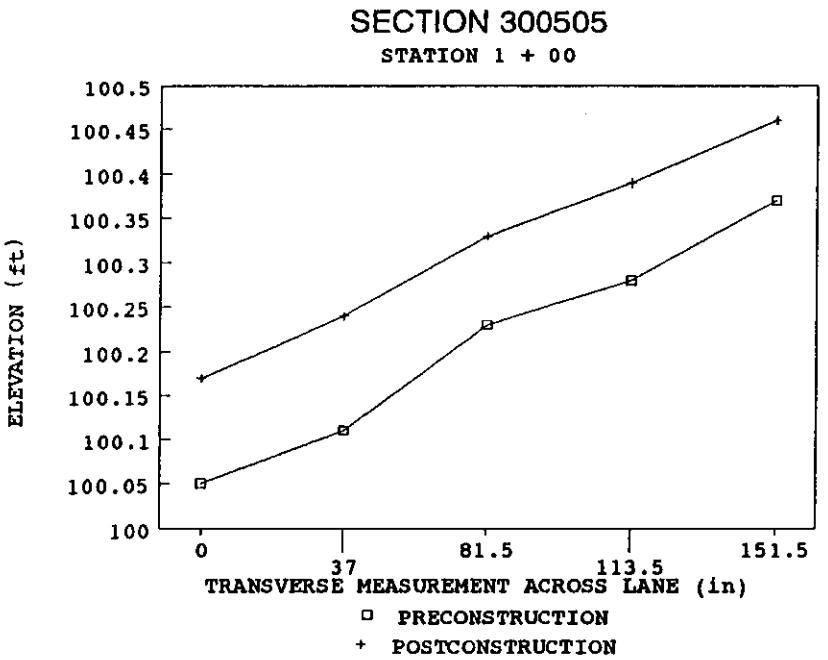
ASSUMED ELEVATION OF 100.00 FT

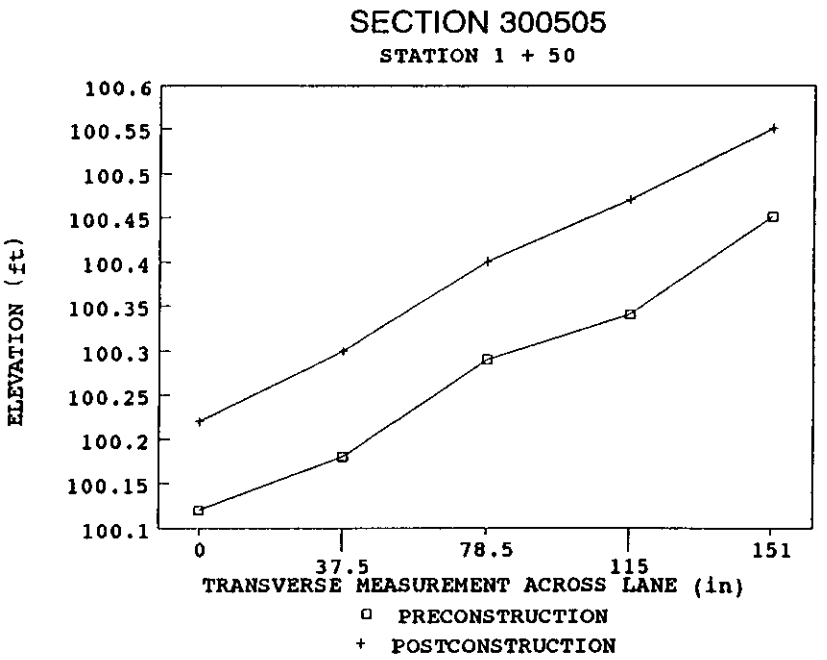
SPS-5 ROD AND LEVEL CALC. BIG TIMBER, MONTANA
SECTION 300505 MINIMUM PREPARATION, 2 INCH VIRGIN

STATION	LANE TO EDGE		ELEVATION	DIFF THICK	OUTER WHEEL PATH		ELEVATION	DIFF THICK	CENTER LINE		ELEVATION	DIFF THICK	IN WHEEL PATH		ELEVATION	DIFF THICK	LANE TO LANE		ELEVATION	DIFF THICK
	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)
0+00	0.00				36.50				74.50				113.50				150.00			
PRECON		5.31	99.91	2.16		5.26	99.96	2.52		5.15	100.07	2.04		5.09	100.13	2.04		5.00	100.22	1.80
POSTCON		5.13	100.09			5.05	100.17			4.99	100.24			4.92	100.30			4.85	100.37	
0+50	0.00				37.00				83.00				116.00				150.00			
PRECON		5.23	99.99	1.20		5.17	100.05	1.32		5.06	100.16	0.84		5.01	100.21	0.84		4.92	100.30	0.48
POSTCON		5.13	100.09			5.06	100.16			4.99	100.23			4.94	100.28			4.88	100.34	
1+00	0.00				37.00				81.50				113.50				151.50			
PRECON		5.17	100.05	1.44		5.11	100.11	1.56		4.99	100.23	1.20		4.94	100.28	1.32		4.85	100.37	1.08
POSTCON		5.05	100.17			4.98	100.24			4.89	100.33			4.83	100.39			4.76	100.46	
1+50	0.00				37.50				78.50				115.00				151.00			
PRECON		5.10	100.12	1.20		5.04	100.18	1.44		4.93	100.29	1.32		4.88	100.34	1.56		4.77	100.45	1.20
POSTCON		5.00	100.22			4.92	100.30			4.82	100.40			4.75	100.47			4.67	100.55	
2+00	0.00				37.00				77.00				113.50				150.50			
PRECON		5.01	100.21	2.16		4.95	100.27	1.32		4.85	100.37	1.32		4.80	100.42	1.56		4.70	100.52	1.32
POSTCON		4.92	100.30			4.84	100.38			4.74	100.48			4.67	100.55			4.59	100.63	
2+50	0.00				40.00				80.50				117.00				151.00			
PRECON		4.88	100.34	1.08		4.83	100.39	1.68		4.72	100.50	1.32		4.66	100.56	1.56		4.59	100.63	1.44
POSTCON		4.79	100.43			4.68	100.53			4.61	100.61			4.53	100.69			4.47	100.75	
3+00	0.00				38.00				74.50				114.00				150.00			
PRECON		4.80	100.42	0.96		4.74	100.48	1.44		4.64	100.58	1.20		4.60	100.62	1.56		4.51	100.71	1.32
POSTCON		4.72	100.50			4.62	100.60			4.54	100.68			4.47	100.75			4.40	100.82	
3+50	0.00				40.50				67.00				116.00				149.50			
PRECON		4.76	100.46	1.20		4.70	100.52	1.56		4.59	100.63	1.44		4.54	100.68	1.56		4.45	100.77	1.20
POSTCON		4.66	100.56			4.57	100.65			4.47	100.75			4.41	100.81			4.35	100.87	
4+00	0.00				43.50				82.50				117.50				148.00			
PRECON		4.66	100.56	1.20		4.60	100.62	1.56		4.51	100.71	1.44		4.47	100.75	1.80		4.38	100.84	1.32
POSTCON		4.56	100.66			4.47	100.75			4.39	100.83			4.32	100.90			4.27	100.95	
4+50	0.00				34.00				74.50				116.00				149.00			
PRECON		4.56	100.84	1.20		4.55	100.87	1.68		4.44	100.78	1.44		4.39	100.83	1.80		4.29	100.93	1.20
POSTCON		4.46	100.74			4.41	100.81			4.32	100.90			4.24	100.98			4.19	101.03	
5+00	0.00				33.00				81.50				119.00				149.00			
PRECON		4.48	100.74	1.08		4.48	100.73	2.04		4.34	100.88	1.56		4.30	100.92	1.92		4.20	101.02	1.20
POSTCON		4.39	100.83			4.32	100.90			4.21	101.01			4.14	101.08			4.10	101.12	


SECTION 300505
STATION 0 + 00
ELEVATION (ft)
100.4
100.3
100.2
100.1
100
99.9
99.8
0
36.5
74.5
113.5
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION

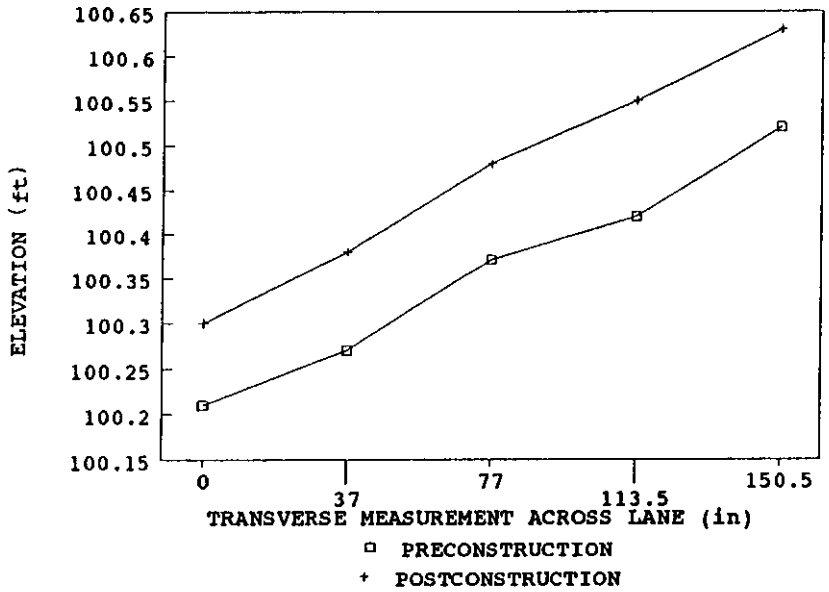

SECTION 300505
STATION 0 + 50
ELEVATION (ft)
100.4
100.35
100.3
100.25
100.2
100.15
100.1
100.05
100
99.95
0
37
83
116
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION


SECTION 300505
STATION 1 + 00
ELEVATION (ft)
100.5
100.45
100.4
100.35
100.3
100.25
100.2
100.15
100.1
100.05
100
0
37
81.5
113.5
151.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION


SECTION 300505
STATION 1 + 50
ELEVATION (ft)
100.6
100.55
100.5
100.45
100.4
100.35
100.3
100.25
100.2
100.15
100.1
0
37.5
78.5
115
151
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POSTCONSTRUCTION

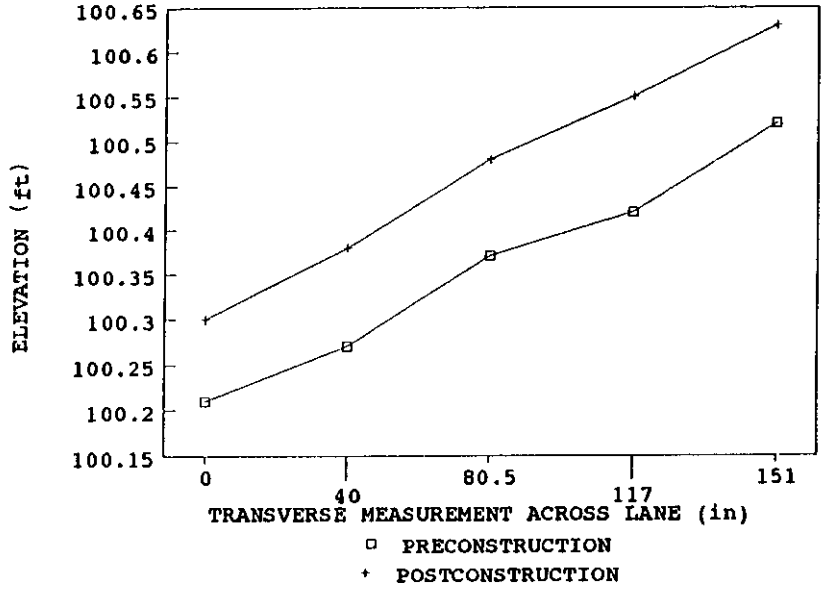
SECTION 300505

STATION 2 + 00



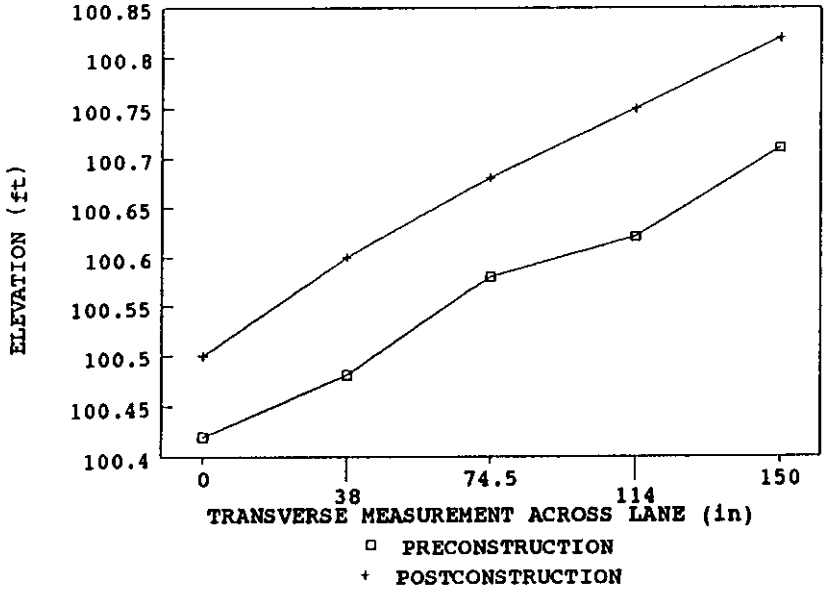
SECTION 300505

STATION 2 + 50



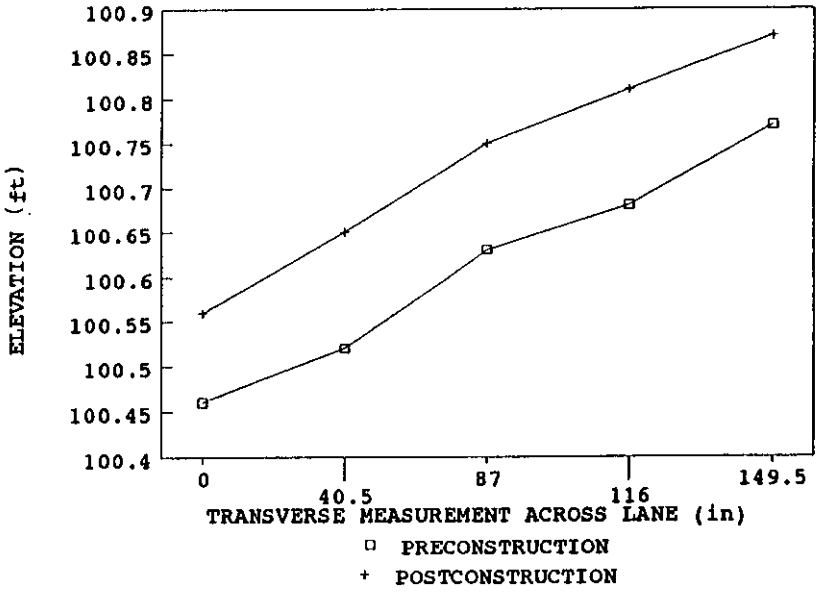
SECTION 300505

STATION 3 + 00



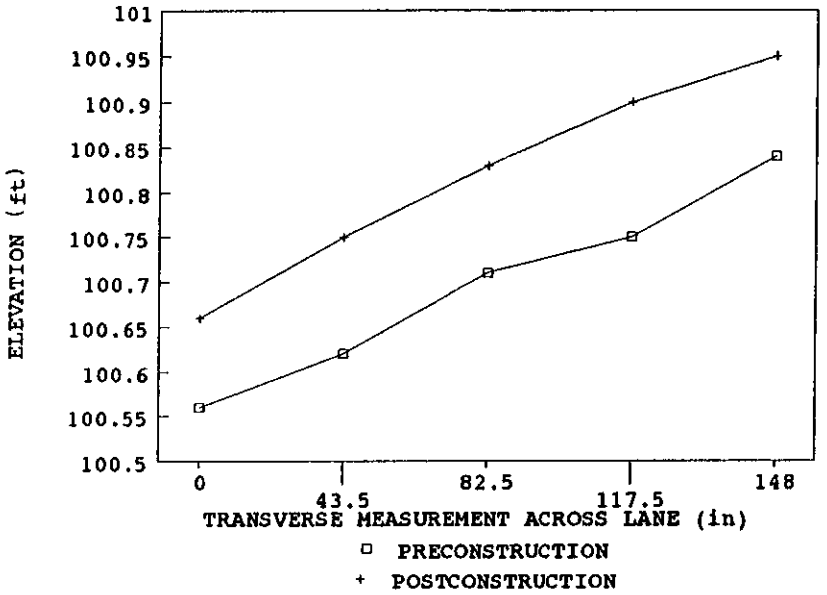
SECTION 300505

STATION 3 + 50



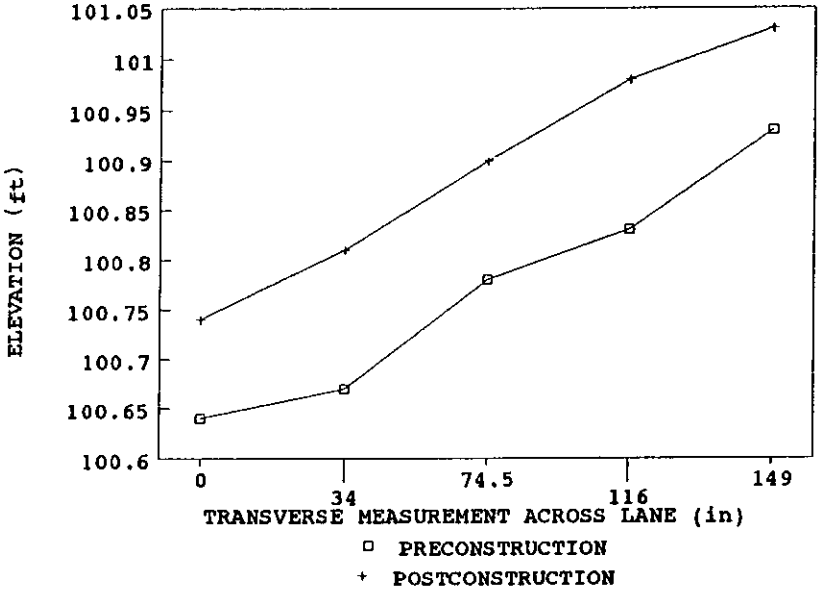
SECTION 300505

STATION 4 + 00



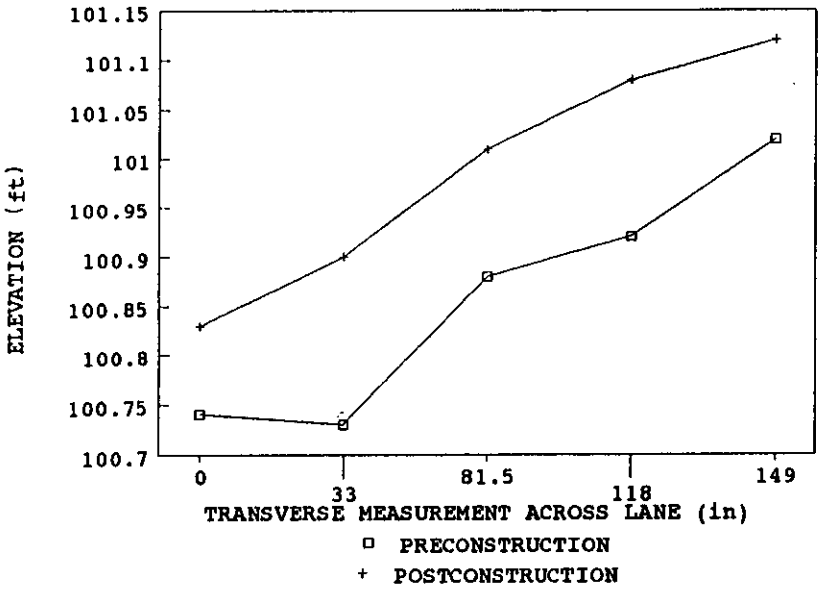
SECTION 300505

STATION 4 + 50



SECTION 300505

STATION 5 + 00

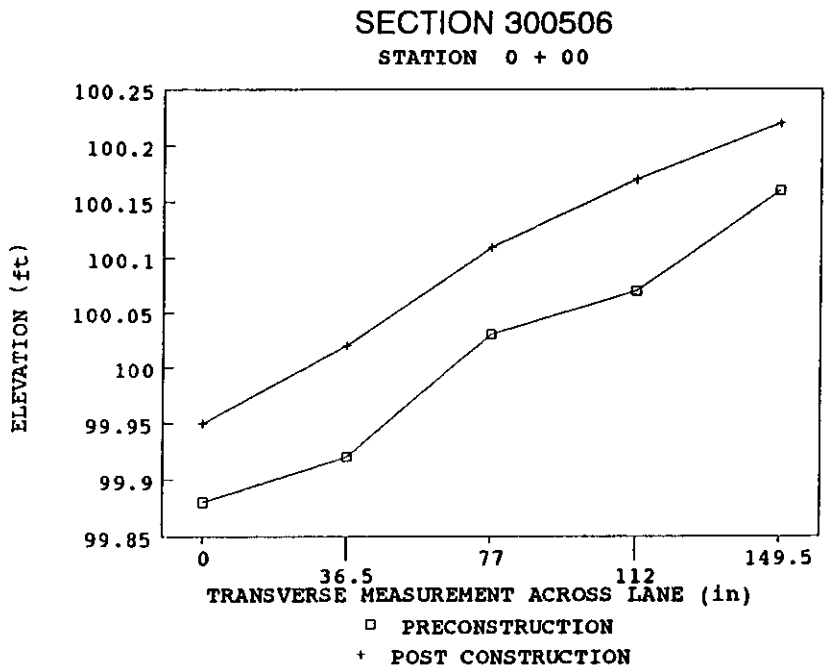


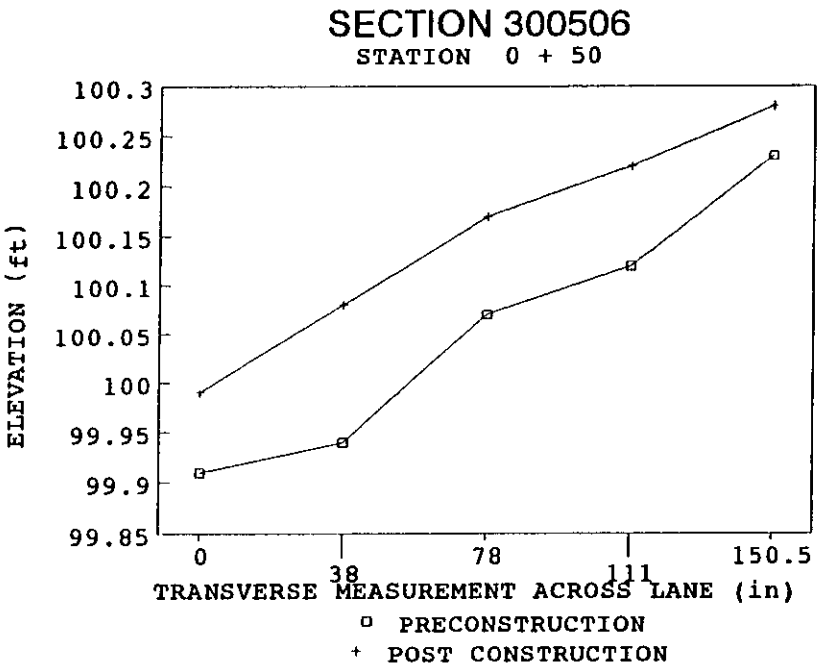
5.25 = HI PRECON
5.25 = HI POSTCON

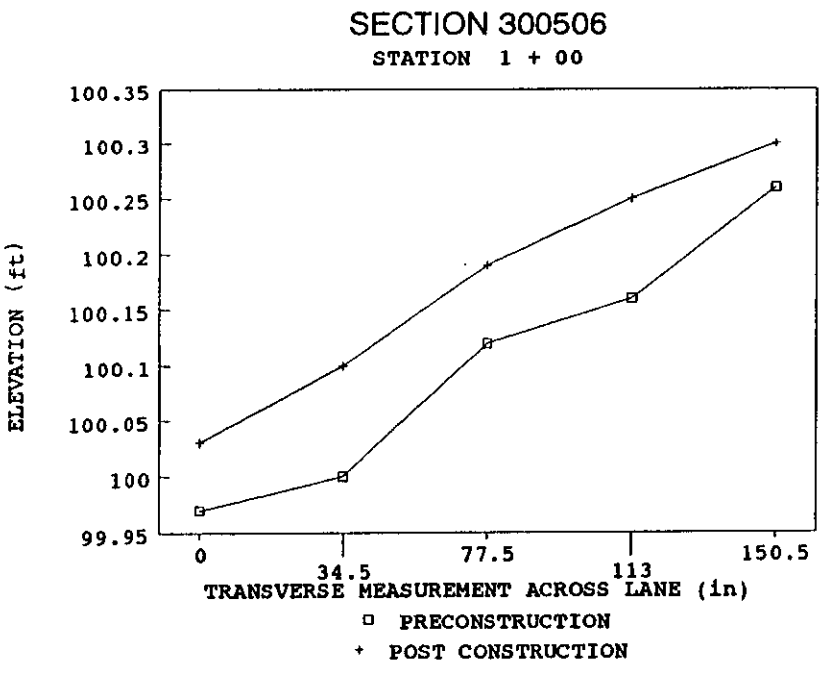
ASSUMED ELEVATION OF 100.00 FT

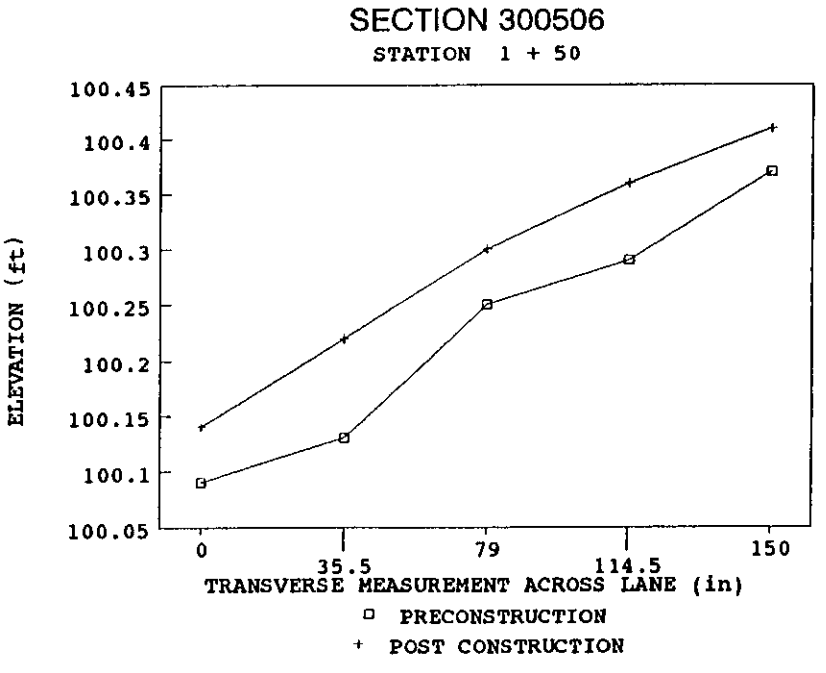
SPS-5 ROD AND LEVEL CALC. BIG TIMBER, MONTANA
SECTION 300508 INTENSIVE PREPARATION, 2 INCH VIRGIN

STATION	LANE TO EDGE		ELEVATION	DIFF THICK	OUTER WHEEL PATH		ELEVATION	DIFF THICK	CENTER LINE		ELEVATION	DIFF THICK	IN WHEEL PATH		ELEVATION	DIFF THICK	LANE TO LANE		ELEVATION	DIFF THICK
	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)
0+00	0.00				36.50				77.00				112.00				149.50			
PRECON		5.37	99.88	0.84		5.33	99.92	1.20		5.22	100.03	0.96		5.18	100.07	1.20		5.09	100.18	0.72
POSTCON		5.30	99.95			5.23	100.02			5.14	100.11			5.08	100.17			5.03	100.22	
0+50	0.00				38.00				78.00				111.00				150.50			
PRECON		5.34	99.91	0.96		5.31	99.94	1.68		5.18	100.07	1.20		5.13	100.12	1.20		5.02	100.23	0.80
POSTCON		5.26	99.99			5.17	100.08			5.08	100.17			5.03	100.22			4.97	100.28	
1+00	0.00				34.50				77.50				113.00				150.50			
PRECON		5.28	99.97	0.72		5.25	100.00	1.20		5.13	100.12	0.84		5.09	100.16	1.08		4.99	100.26	0.48
POSTCON		5.22	100.03			5.15	100.10			5.06	100.19			5.00	100.25			4.95	100.30	
1+50	0.00				35.50				79.00				114.50				150.00			
PRECON		5.18	100.09	0.60		5.12	100.13	1.08		5.00	100.25	0.60		4.96	100.29	0.84		4.89	100.37	0.48
POSTCON		5.11	100.14			5.03	100.22			4.95	100.30			4.89	100.36			4.84	100.41	
2+00	0.00				35.00				77.00				113.50				151.00			
PRECON		5.11	100.14	0.84		5.06	100.19	1.20		4.95	100.30	0.96		4.90	100.35	1.20		4.82	100.43	0.96
POSTCON		5.03	100.22			4.96	100.29			4.87	100.38			4.80	100.45			4.74	100.51	
2+50	0.00				38.00				76.00				114.00				149.50			
PRECON		5.10	100.15	1.20		5.06	100.19	1.80		4.96	100.29	1.56		4.91	100.34	1.92		4.82	100.43	1.44
POSTCON		5.00	100.25			4.91	100.34			4.83	100.42			4.75	100.50			4.70	100.55	
3+00	0.00				38.00				79.00				113.00				150.00			
PRECON		5.02	100.23	1.20		4.97	100.28	1.56		4.87	100.38	1.44		4.82	100.43	1.68		4.73	100.52	1.32
POSTCON		4.92	100.33			4.84	100.41			4.75	100.50			4.68	100.57			4.62	100.63	
3+50	0.00				36.50				79.00				114.00				150.00			
PRECON		4.95	100.30	1.20		4.92	100.33	1.80		4.80	100.45	1.44		4.75	100.50	1.56		4.67	100.58	1.20
POSTCON		4.85	100.40			4.77	100.48			4.68	100.57			4.62	100.63			4.57	100.68	
4+00	0.00				32.00				78.50				115.00				150.00			
PRECON		4.83	100.42	0.96		4.78	100.47	1.08		4.67	100.58	0.84		4.63	100.62	1.20		4.54	100.71	0.80
POSTCON		4.75	100.50			4.69	100.56			4.60	100.65			4.53	100.72			4.49	100.76	
4+50	0.00				37.50				80.00				114.00				149.00			
PRECON		4.75	100.50	0.96		4.71	100.54	1.32		4.61	100.64	1.08		4.56	100.69	1.20		4.47	100.78	0.80
POSTCON		4.67	100.58			4.60	100.65			4.52	100.73			4.46	100.79			4.42	100.83	
5+00	0.00				38.00				80.50				115.50				149.00			
PRECON		4.64	100.61	0.72		4.60	100.65	1.20		4.50	100.75	0.96		4.46	100.79	1.08		4.38	100.87	0.72
POSTCON		4.58	100.67			4.50	100.75			4.42	100.83			4.37	100.88			4.32	100.93	


SECTION 300506
STATION 0 + 00
100.25
100.2
100.15
100.1
100.05
100
99.95
99.9
99.85
ELEVATION (ft)
0
36.5
77
112
149.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

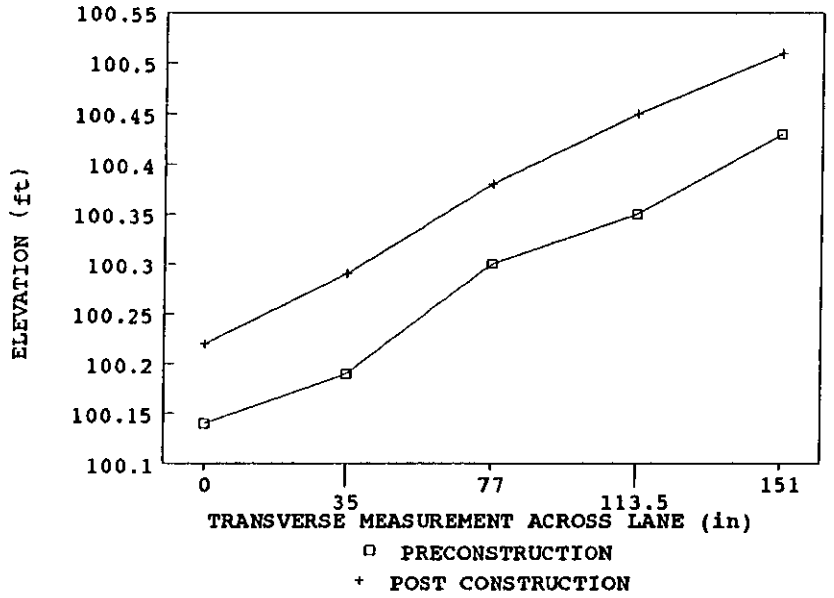

SECTION 300506
STATION 0 + 50
100.3
100.25
100.2
100.15
100.1
100.05
100
99.95
99.9
99.85
ELEVATION (ft)
0
38
78
111
150.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300506
STATION 1 + 00
100.35
100.3
100.25
100.2
100.15
100.1
100.05
100
99.95
ELEVATION (ft)
0
34.5
77.5
113
150.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300506
STATION 1 + 50
100.45
100.4
100.35
100.3
100.25
100.2
100.15
100.1
100.05
ELEVATION (ft)
0
35.5
79
114.5
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

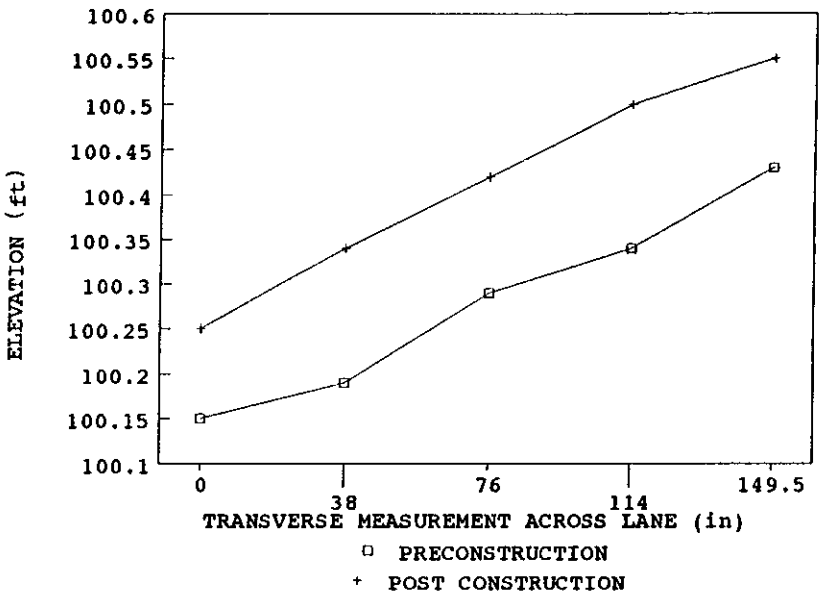
SECTION 300506

STATION 2 + 00



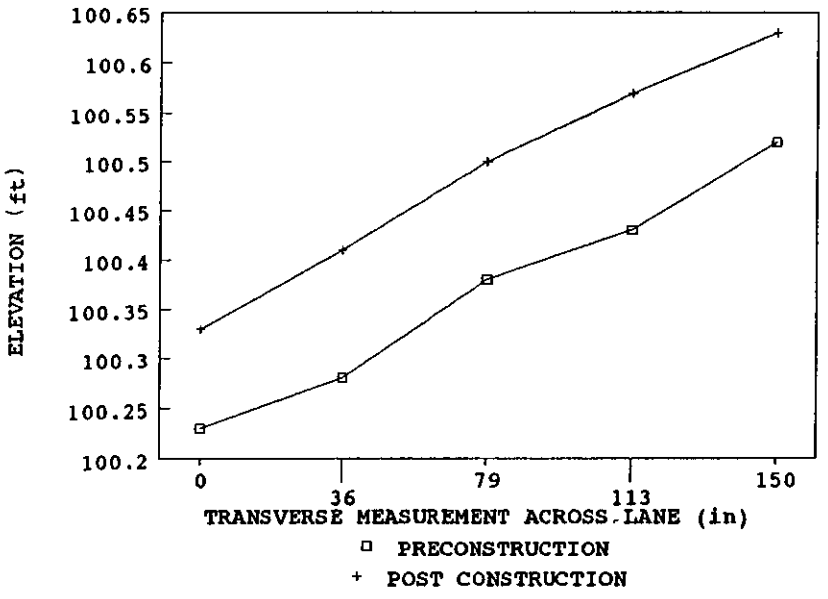
SECTION 300506

STATION 2 + 50



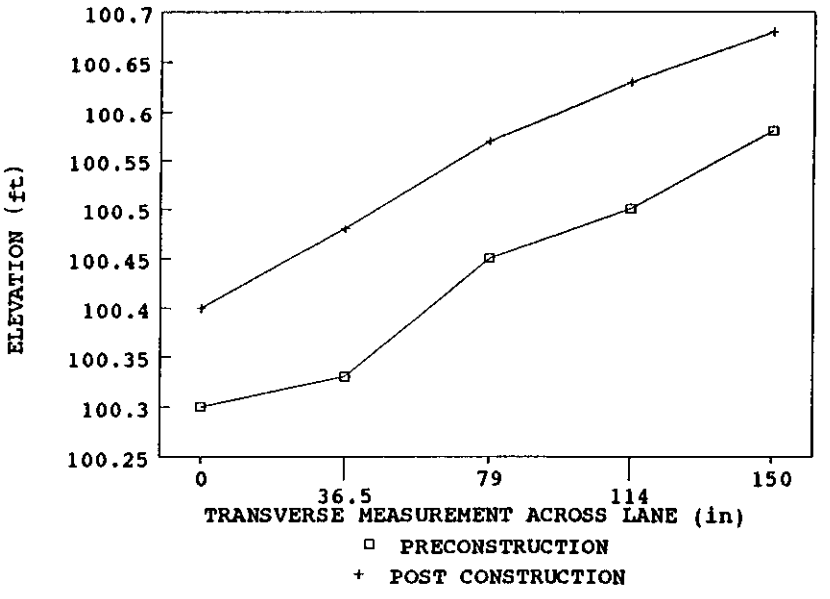
SECTION 300506

STATION 3 + 00



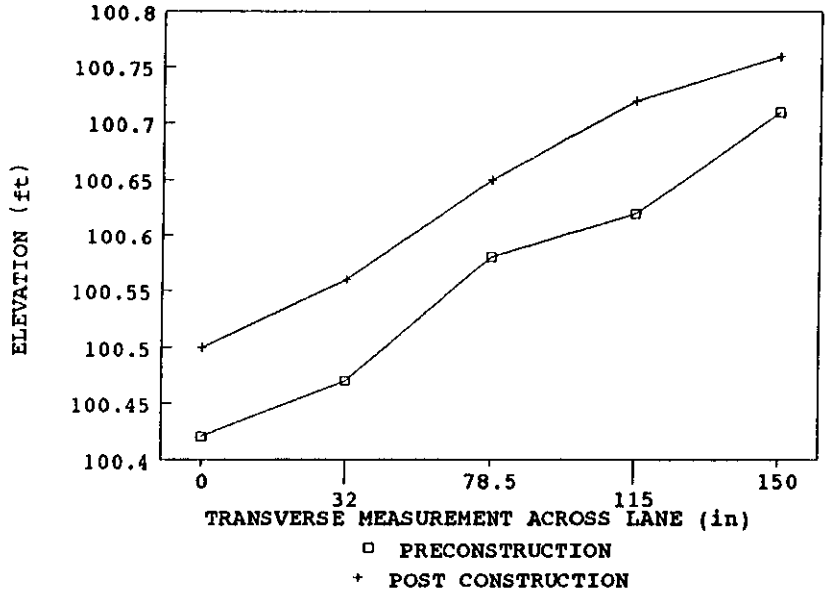
SECTION 300506

STATION 3 + 50



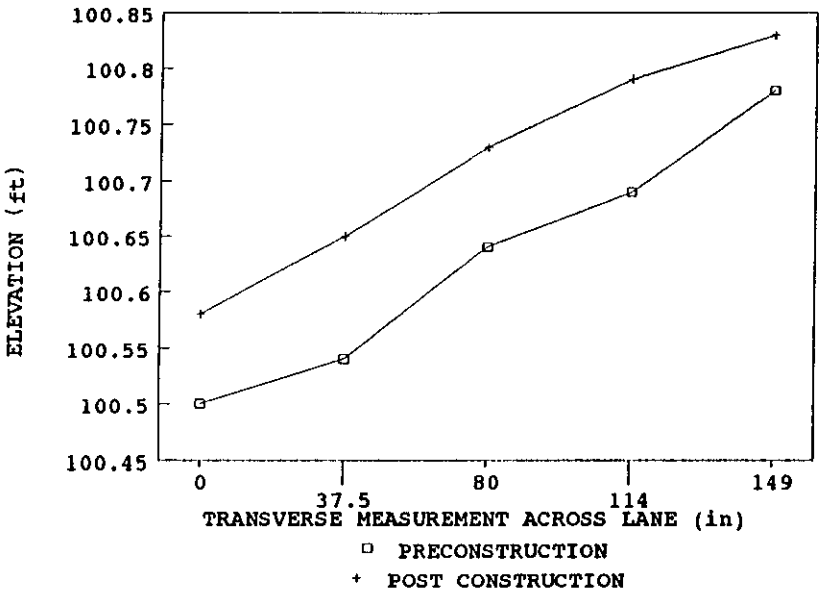
SECTION 300506

STATION 4 + 00



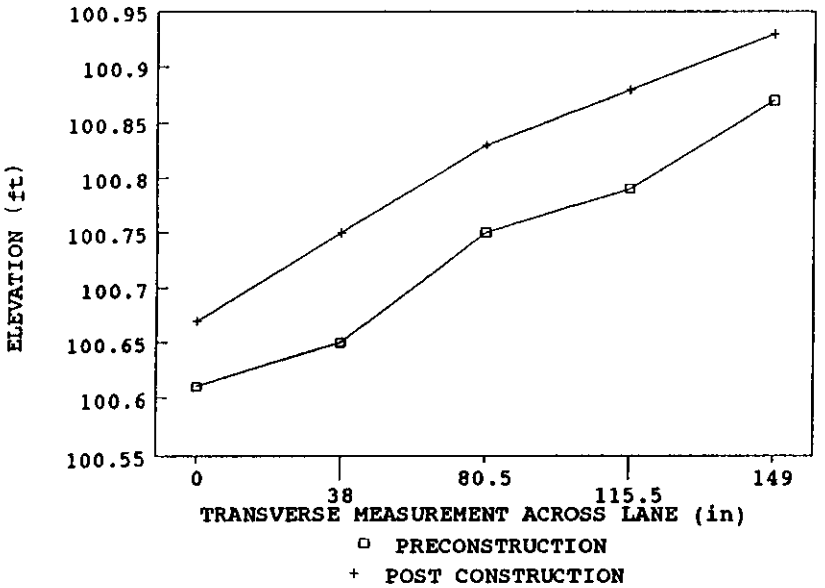
SECTION 300506

STATION 4 + 50



SECTION 300506

STATION 5 + 00

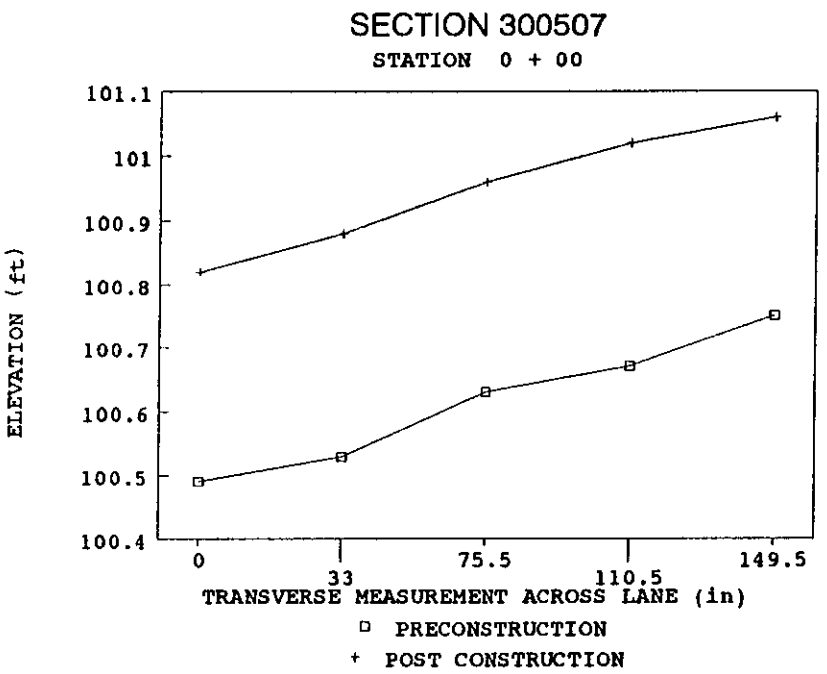


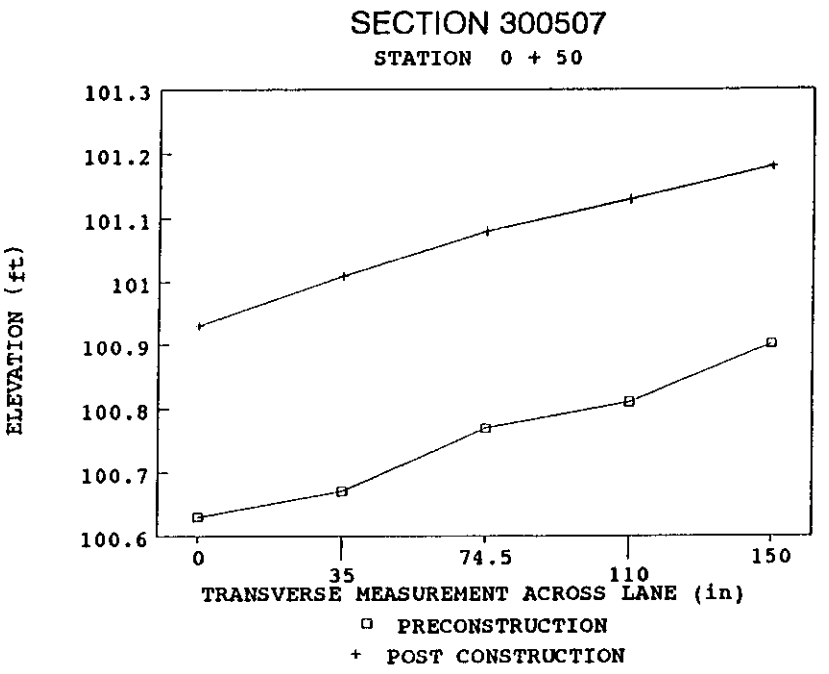
5.75 = HI PRECON
6.06 = HI POSTCON

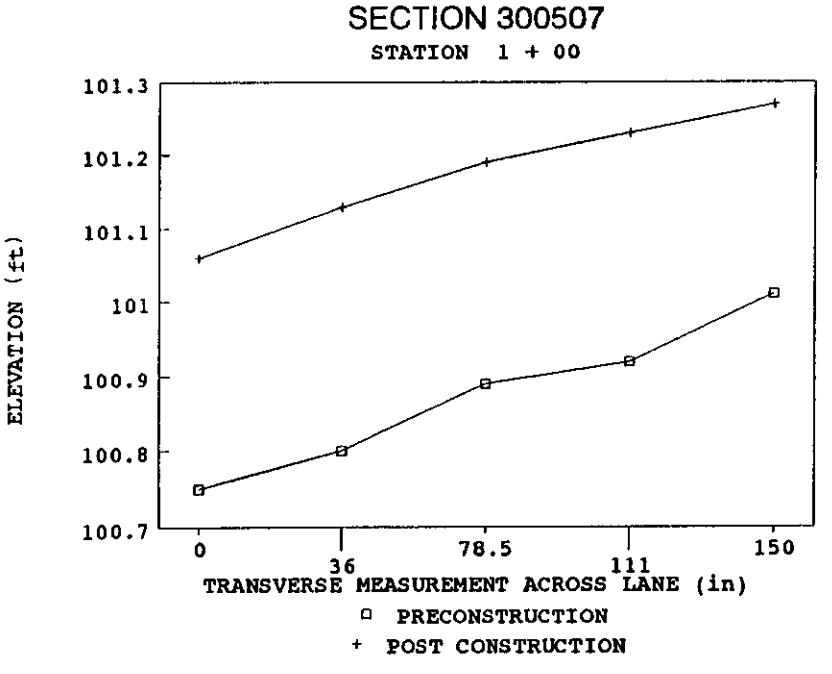
ASSUMED ELEVATION OF 100.00 FT

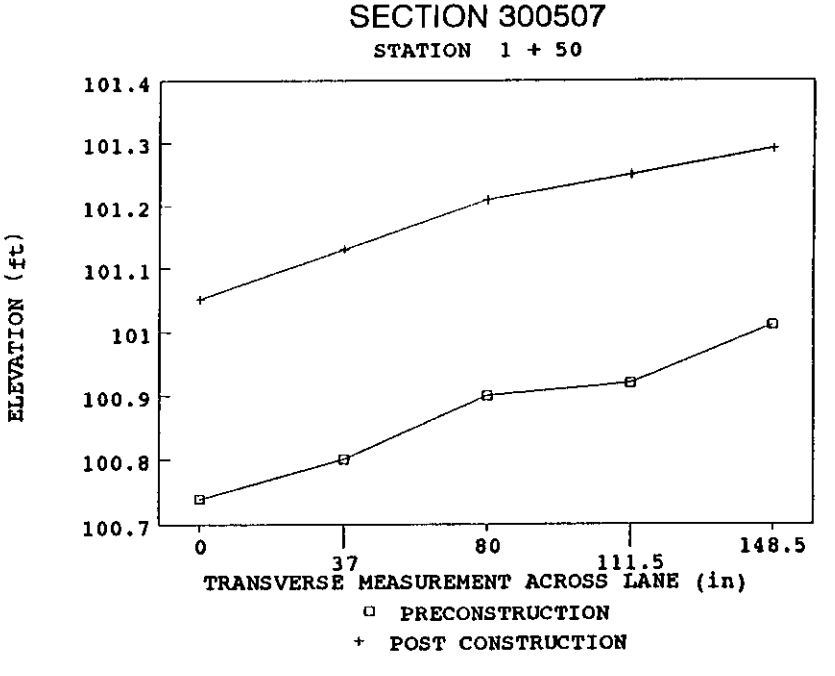
SPS-5 ROD AND LEVEL CALC. BIG TIMBER, MONTANA
SECTION 300507 INTENSIVE PREPARATION 5 INCH VIRGIN

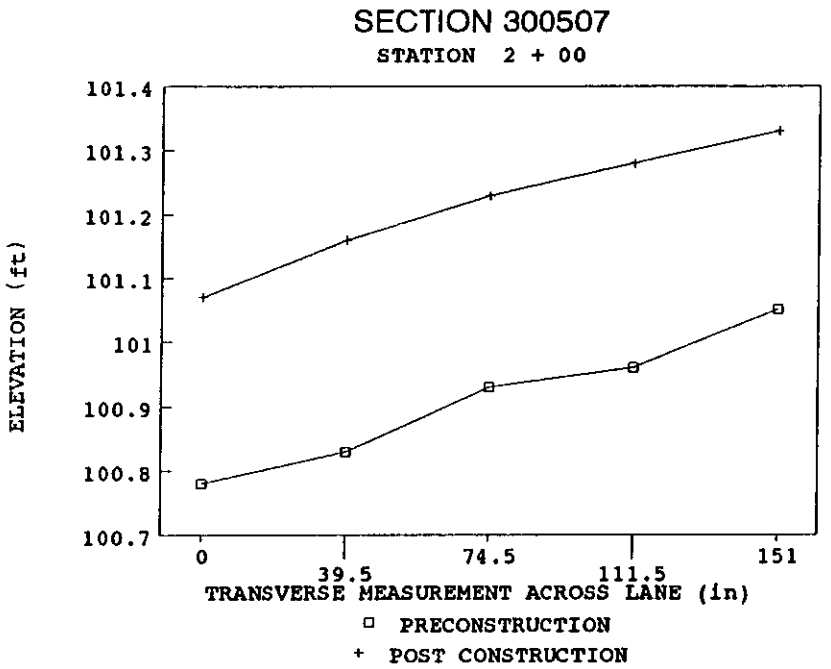
STATION	LANE TO EDGE		ELEVATION	DIFF THICK	OUTER WHEEL PATH		ELEVATION	DIFF THICK	CENTER LINE		ELEVATION	DIFF THICK	IN WHEEL PATH		ELEVATION	DIFF THICK	LANE TO LANE		ELEVATION	DIFF THICK
	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)
0+00	0.00				33.00				75.50				110.50				149.50			
PRECON		5.28	100.49	3.96		5.22	100.53	4.20		5.12	100.63	3.96		5.09	100.67	4.20		5.00	100.75	3.72
POSTCON		5.24	100.82			5.18	100.88			5.10	100.98			5.04	101.02			5.00	101.06	
0+50	0.00				35.00				74.50				110.00				150.00			
PRECON		5.12	100.83	3.80		5.08	100.87	4.08		4.98	100.77	3.72		4.94	100.81	3.84		4.85	100.90	3.36
POSTCON		5.13	100.93			5.05	101.01			4.99	101.08			4.93	101.13			4.88	101.18	
1+00	0.00				36.00				79.50				111.00				150.00			
PRECON		5.00	100.75	3.72		4.95	100.80	3.96		4.86	100.98	3.60		4.83	100.92	3.72		4.74	101.01	3.12
POSTCON		5.00	101.06			4.93	101.13			4.87	101.19			4.83	101.23			4.79	101.27	
1+50	0.00				37.00				80.00				111.50				148.50			
PRECON		5.01	100.74	3.72		4.95	100.80	3.96		4.85	100.90	3.72		4.83	100.92	3.96		4.74	101.01	3.36
POSTCON		5.01	101.06			4.93	101.13			4.95	101.21			4.81	101.25			4.77	101.29	
2+00	0.00				39.50				74.50				111.50				151.00			
PRECON		4.97	100.78	3.96		4.92	100.83	3.96		4.82	100.93	3.60		4.79	100.96	3.84		4.70	101.05	3.36
POSTCON		4.99	101.07			4.90	101.16			4.83	101.23			4.78	101.28			4.73	101.33	
2+50	0.00				38.50				80.50				112.00				150.00			
PRECON		4.98	100.87	3.80		4.84	100.91	4.08		4.73	101.02	3.84		4.70	101.05	4.08		4.60	101.15	3.36
POSTCON		4.99	101.17			4.81	101.25			4.72	101.34			4.67	101.39			4.63	101.43	
3+00	0.00				39.00				80.00				112.00				152.00			
PRECON		4.78	100.97	3.36		4.74	101.01	3.96		4.63	101.12	4.80		4.60	101.15	3.96		4.50	101.25	3.24
POSTCON		4.81	101.25			4.72	101.34			4.54	101.52			4.56	101.48			4.54	101.52	
3+50	0.00				34.00				79.00				111.00				152.50			
PRECON		4.67	101.08	3.48		4.65	101.10	4.08		4.52	101.23	3.60		4.50	101.25	4.08		4.40	101.35	3.36
POSTCON		4.69	101.37			4.62	101.44			4.53	101.53			4.47	101.59			4.43	101.63	
4+00	0.00				36.00				74.00				110.00				150.50			
PRECON		4.57	101.18	3.48		4.55	101.20	4.20		4.44	101.31	3.84		4.41	101.34	4.32		4.32	101.43	3.84
POSTCON		4.59	101.47			4.51	101.55			4.43	101.63			4.36	101.70			4.31	101.75	
4+50	0.00				38.00				74.50				112.00				151.50			
PRECON		4.44	101.31	3.00		4.40	101.35	3.48		4.29	101.46	4.32		4.25	101.50	3.48		4.16	101.59	2.88
POSTCON		4.50	101.56			4.42	101.64			4.24	101.82			4.27	101.79			4.23	101.83	
5+00	0.00				34.50				74.00				112.00				151.00			
PRECON		4.35	101.40	3.36		4.31	101.44	3.84		4.20	101.55	3.60		4.15	101.60	3.96		4.06	101.69	3.36
POSTCON		4.38	101.66			4.30	101.76			4.21	101.85			4.13	101.93			4.09	101.97	

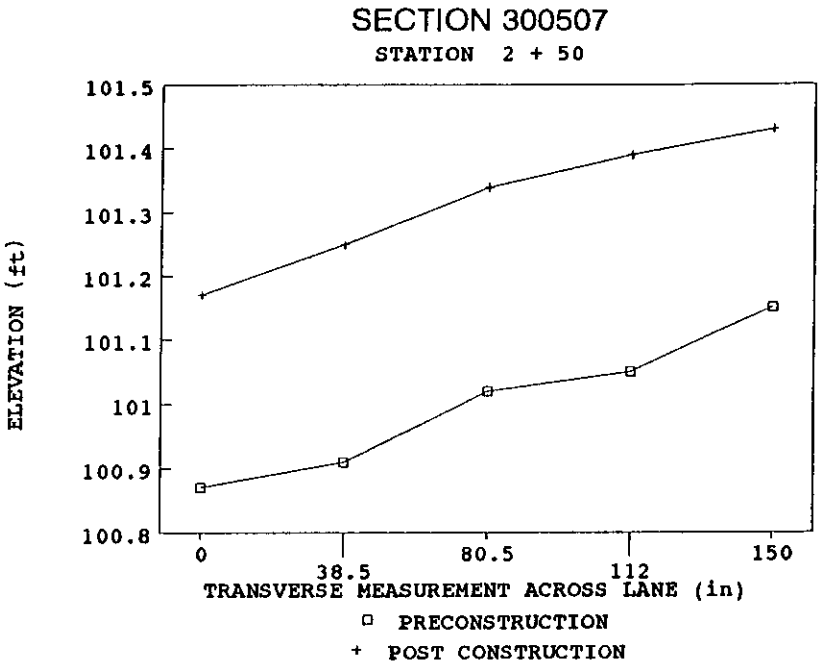

SECTION 300507
STATION 0 + 00
ELEVATION (ft)
101.1
101
100.9
100.8
100.7
100.6
100.5
100.4
0
33
75.5
110.5
149.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

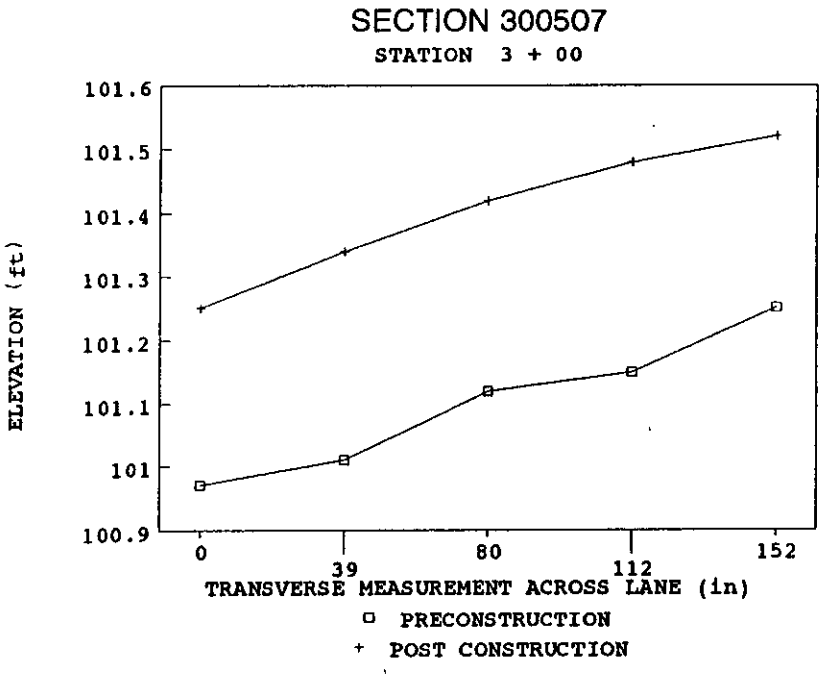

SECTION 300507
STATION 0 + 50
ELEVATION (ft)
101.3
101.2
101.1
101
100.9
100.8
100.7
100.6
0
35
74.5
110
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

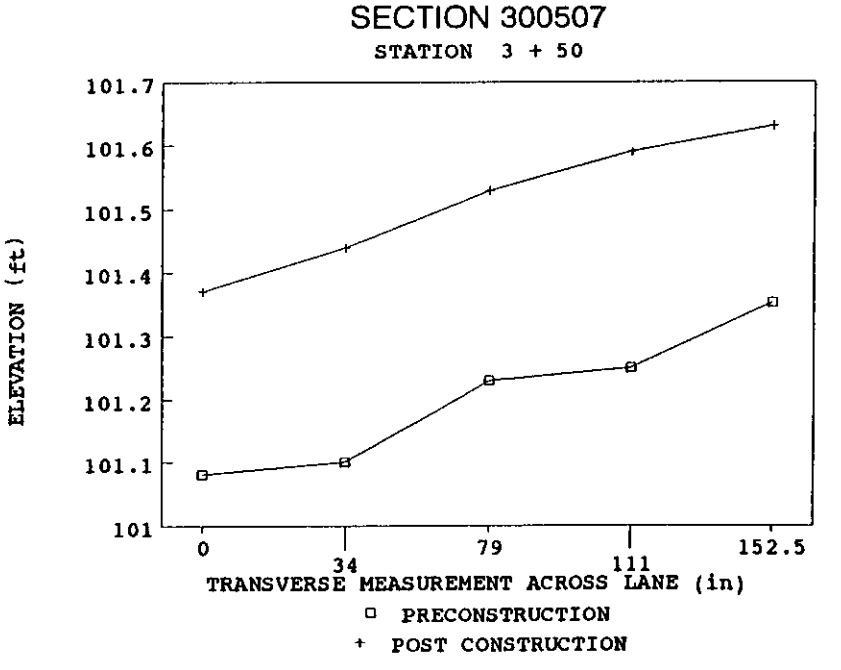

SECTION 300507
STATION 1 + 00
ELEVATION (ft)
101.3
101.2
101.1
101
100.9
100.8
100.7
0
36
78.5
111
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

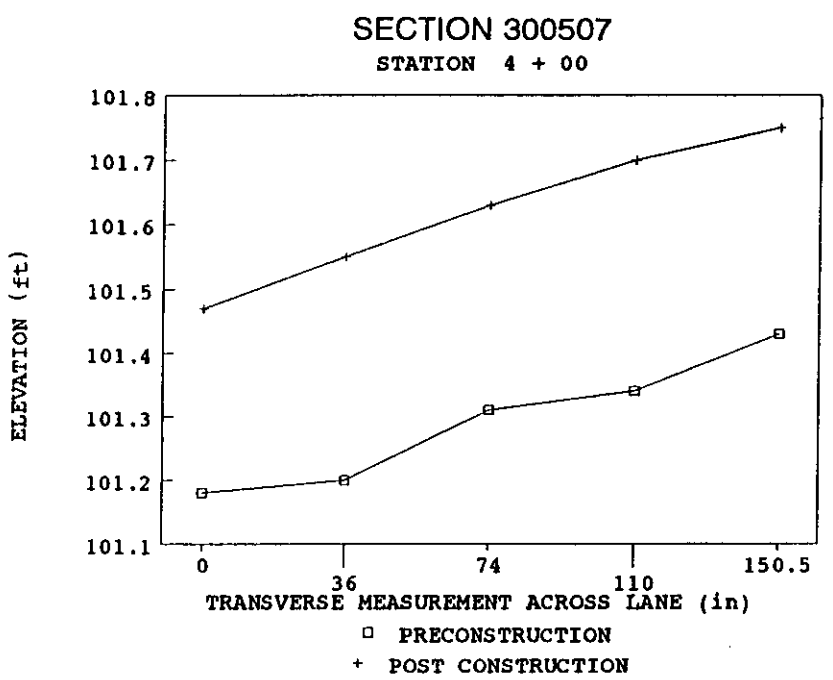

SECTION 300507
STATION 1 + 50
ELEVATION (ft)
101.4
101.3
101.2
101.1
101
100.9
100.8
100.7
0
37
80
111.5
148.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

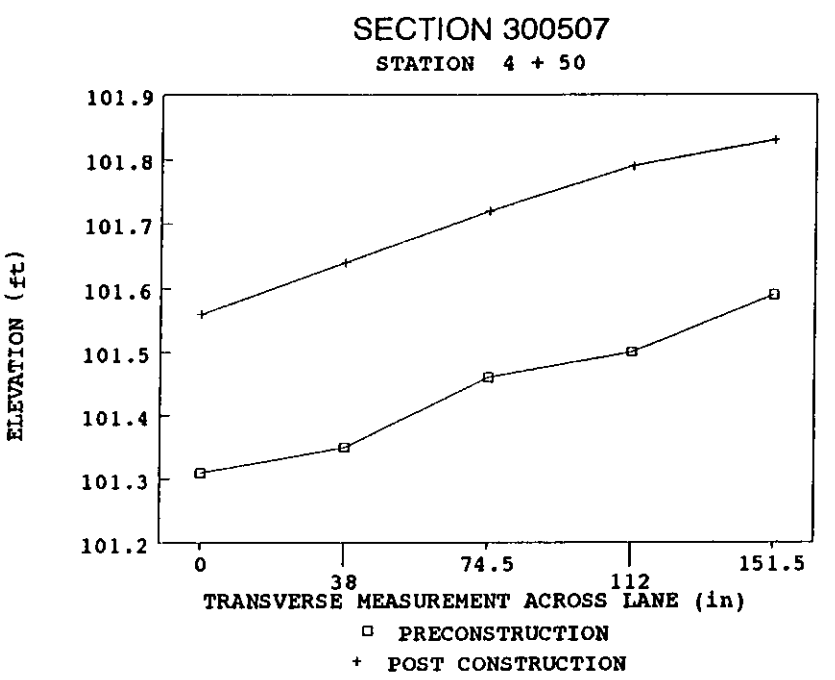

SECTION 300507
STATION 2 + 00
ELEVATION (ft)
101.4
101.3
101.2
101.1
101
100.9
100.8
100.7
0
39.5
74.5
111.5
151
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

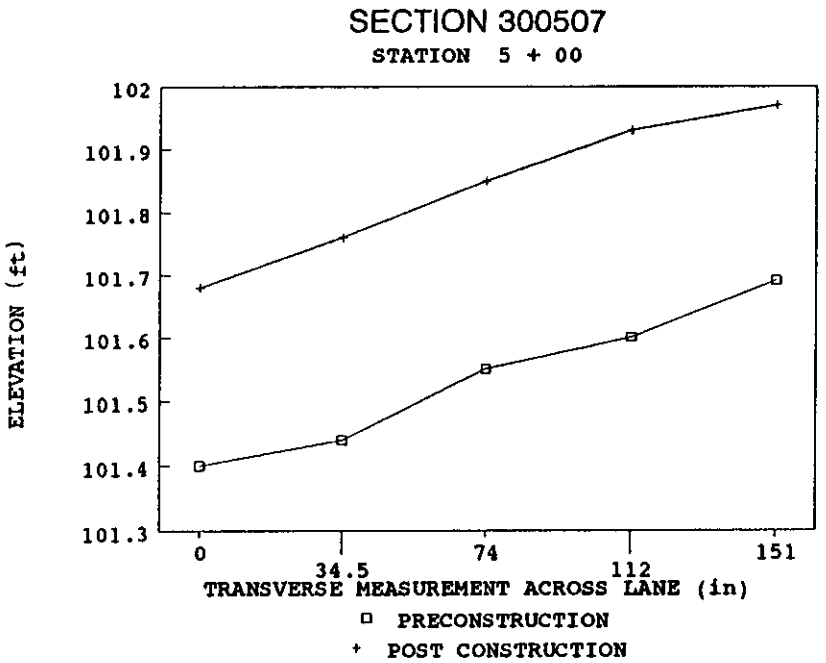

SECTION 300507
STATION 2 + 50
ELEVATION (ft)
101.5
101.4
101.3
101.2
101.1
101
100.9
100.8
0
38.5
80.5
112
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300507
STATION 3 + 00
ELEVATION (ft)
101.6
101.5
101.4
101.3
101.2
101.1
101
100.9
0
39
80
112
152
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300507
STATION 3 + 50
ELEVATION (ft)
101.7
101.6
101.5
101.4
101.3
101.2
101.1
101
0
34
79
111
152.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300507
STATION 4 + 00
ELEVATION (ft)
101.8
101.7
101.6
101.5
101.4
101.3
101.2
101.1
0
36
74
110
150.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300507
STATION 4 + 50
ELEVATION (ft)
101.9
101.8
101.7
101.6
101.5
101.4
101.3
101.2
0
38
74.5
112
151.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300507
STATION 5 + 00
ELEVATION (ft)
102
101.9
101.8
101.7
101.6
101.5
101.4
101.3
0
34.5
74
112
151
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

7.40 = HI PRECON
7.41 = HI POSTCON

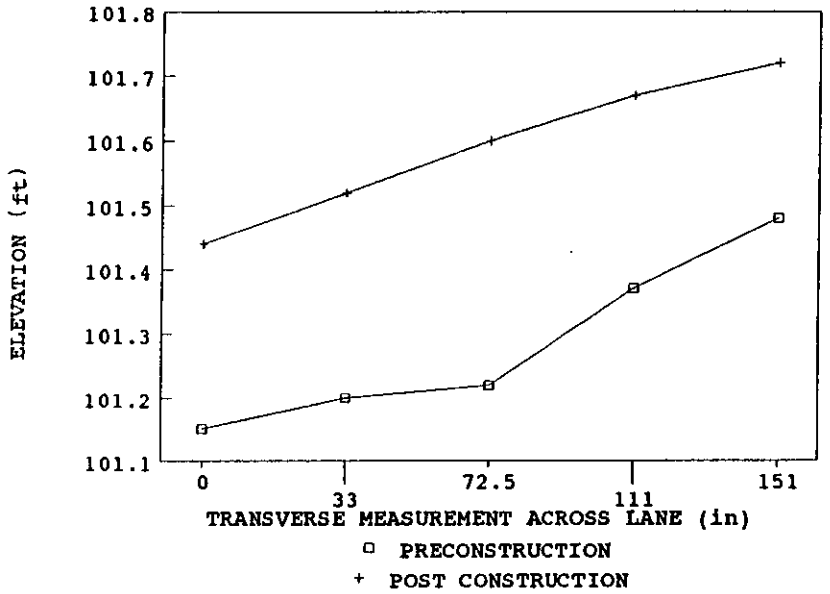
ASSUMED ELEVATION OF 100.00 FT

SP5--5 ROD AND LEVEL CALC. BIG TIMBER, MONTANA
SECTION 300509 INTENSIVE PREPARATION 5 INCH RECYCLE

STATION	LANE TO EDGE		ELEVATION	DIFF THICK	OUTER WHEEL PATH		ELEVATION	DIFF THICK	CENTER LINE		ELEVATION	DIFF THICK	IN WHEEL PATH		ELEVATION	DIFF THICK	LANE TO LANE		ELEVATION	DIFF THICK
	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)
0+00	0.00				33.00				72.50				111.00				151.00			
PRECON		6.25	101.15	3.48		6.20	101.20	3.84		6.19	101.22	4.56		6.03	101.37	3.60		5.92	101.48	2.88
POSTCON		5.97	101.44			5.89	101.52			5.81	101.60			5.74	101.67			5.69	101.72	
0+50	0.00				40.00				80.00				112.00				152.00			
PRECON		6.00	101.40	3.24		5.93	101.47	3.60		5.82	101.58	3.36		5.77	101.63	3.36		5.66	101.74	2.64
POSTCON		5.74	101.67			5.64	101.77			5.55	101.86			5.50	101.91			5.45	101.96	
1+00	0.00				36.00				72.00				112.00				152.00			
PRECON		5.82	101.58	3.60		5.75	101.65	3.84		5.66	101.74	3.72		5.59	101.91	3.60		5.48	101.92	2.88
POSTCON		5.53	101.88			5.44	101.97			5.36	102.05			5.30	102.11			5.25	102.16	
1+50	0.00				36.50				76.50				111.00				150.00			
PRECON		5.60	101.80	3.48		5.53	101.87	3.84		5.43	101.97	3.60		5.37	102.03	3.60		5.27	102.13	3.00
POSTCON		5.32	102.09			5.22	102.19			5.14	102.27			5.08	102.33			5.03	102.38	
2+00	0.00				33.00				72.00				111.50				147.50			
PRECON		5.30	102.10	3.48		5.24	102.16	3.60		5.14	102.26	3.48		5.07	102.33	3.48		4.97	102.43	3.00
POSTCON		5.04	102.37			4.96	102.46			4.86	102.55			4.79	102.62			4.73	102.68	
2+50	0.00				36.00				75.00				112.00				149.50			
PRECON		4.98	102.42	2.04		5.04	102.36	3.96		4.93	102.47	3.72		4.86	102.54	3.72		4.77	102.63	3.24
POSTCON		4.82	102.59			4.72	102.69			4.63	102.78			4.56	102.85			4.51	102.90	
3+00	0.00				32.50				72.00				111.50				148.00			
PRECON		4.95	102.55	3.48		4.80	102.60	3.72		4.71	102.69	3.72		4.64	102.76	3.12		4.56	102.84	3.36
POSTCON		4.57	102.84			4.50	102.91			4.41	103.00			4.39	103.02			4.29	103.12	
3+50	0.00				36.00				72.00				111.00				150.00			
PRECON		4.64	102.76	3.48		4.60	102.80	3.72		4.53	102.87	3.60		4.49	102.91	3.60		4.43	102.97	3.24
POSTCON		4.36	103.05			4.30	103.11			4.24	103.17			4.20	103.21			4.17	103.24	
4+00	0.00				42.00				77.50				111.50				152.00			
PRECON		4.43	102.97	3.36		4.40	103.00	3.60		4.37	103.03	3.72		4.35	103.05	3.72		4.29	103.12	3.00
POSTCON		4.16	103.25			4.11	103.30			4.07	103.34			4.05	103.36			4.04	103.37	
4+50	0.00				37.00				78.00				113.00				151.00			
PRECON		4.14	103.26	3.24		4.15	103.25	3.72		4.11	103.29	3.60		4.10	103.30	3.48		4.08	103.34	3.00
POSTCON		3.88	103.53			3.85	103.56			3.82	103.59			3.82	103.59			3.82	103.59	
5+00	0.00				37.00				73.50				111.00				147.50			
PRECON		3.81	103.59	3.48		3.85	103.55	4.08		3.82	103.58	3.84		3.83	103.57	3.96		3.81	103.59	3.36
POSTCON		3.53	103.86			3.52	103.89			3.51	103.90			3.51	103.90			3.54	103.87	

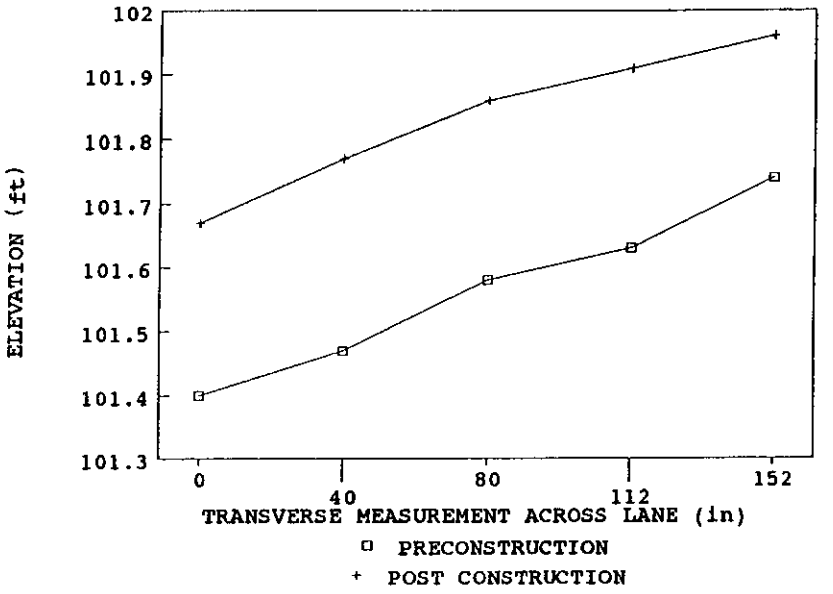
SECTION 300508

STATION 0 + 00



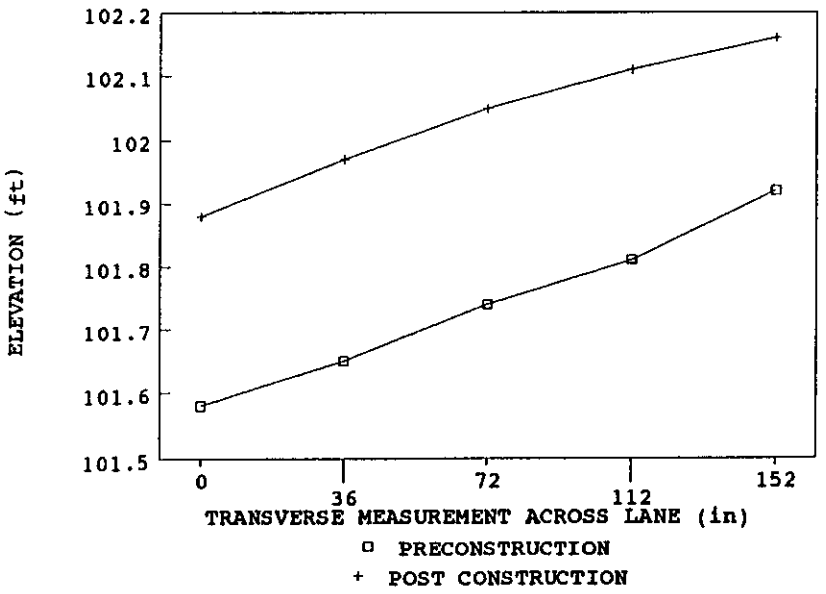
SECTION 300508

STATION 0 + 50



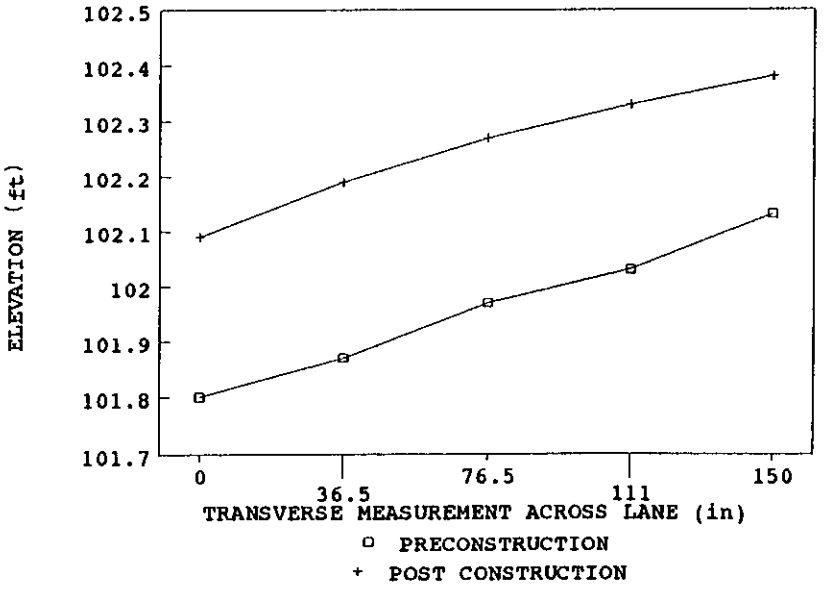
SECTION 300508

STATION 1 + 00



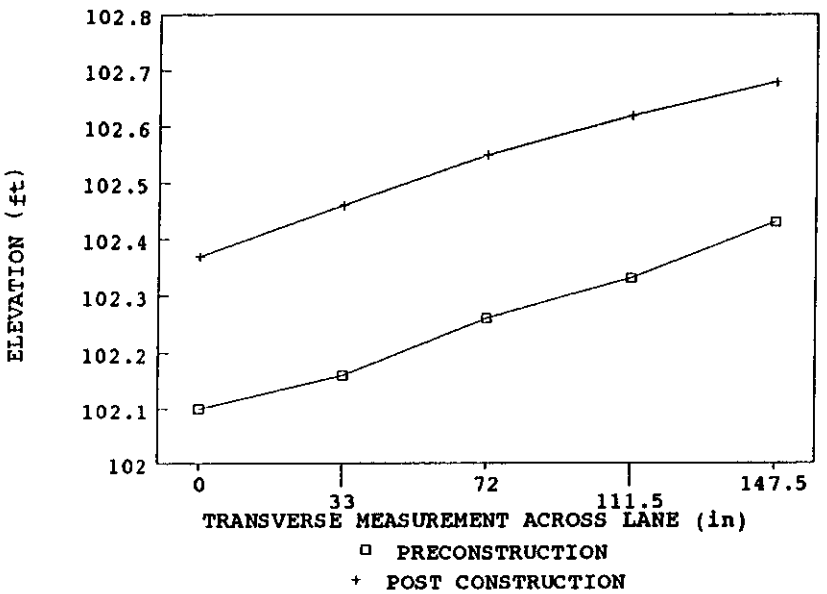
SECTION 300508

STATION 1 + 50



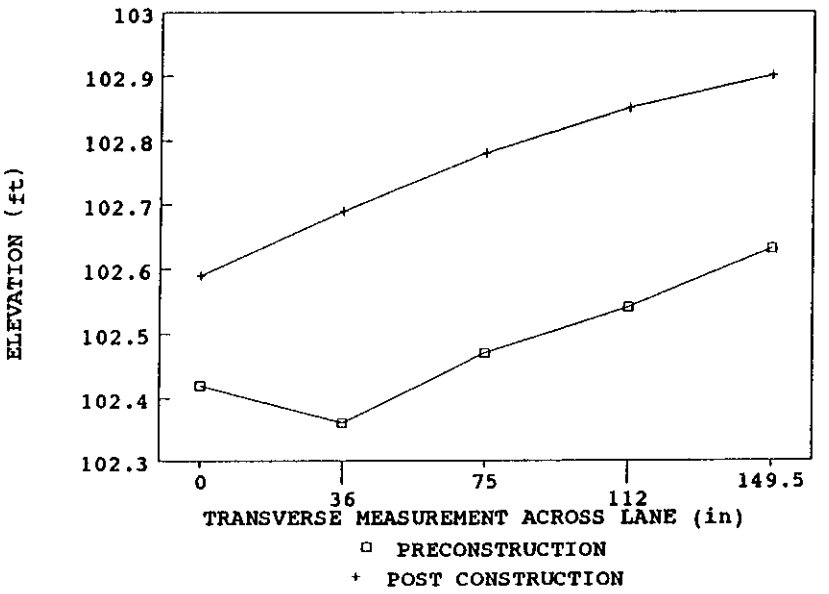
SECTION 300508

STATION 2 + 00



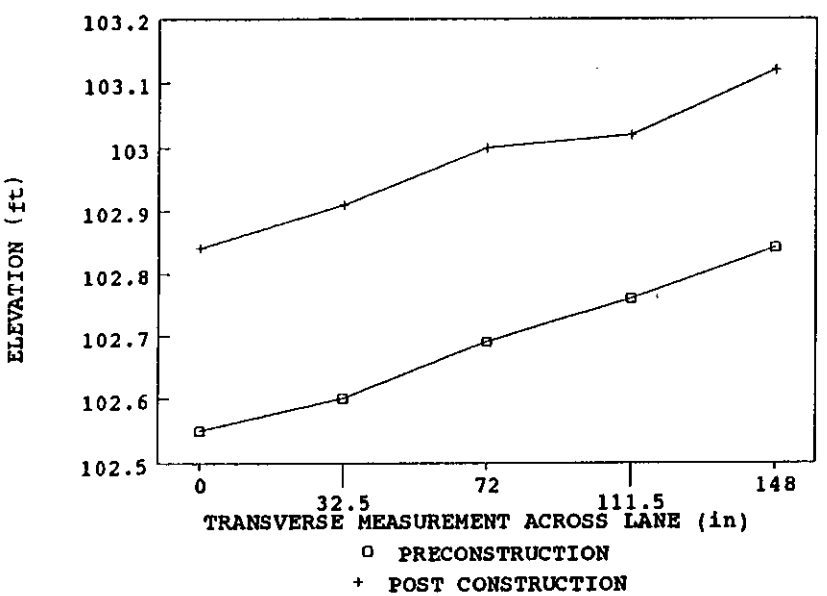
SECTION 300508

STATION 2 + 50



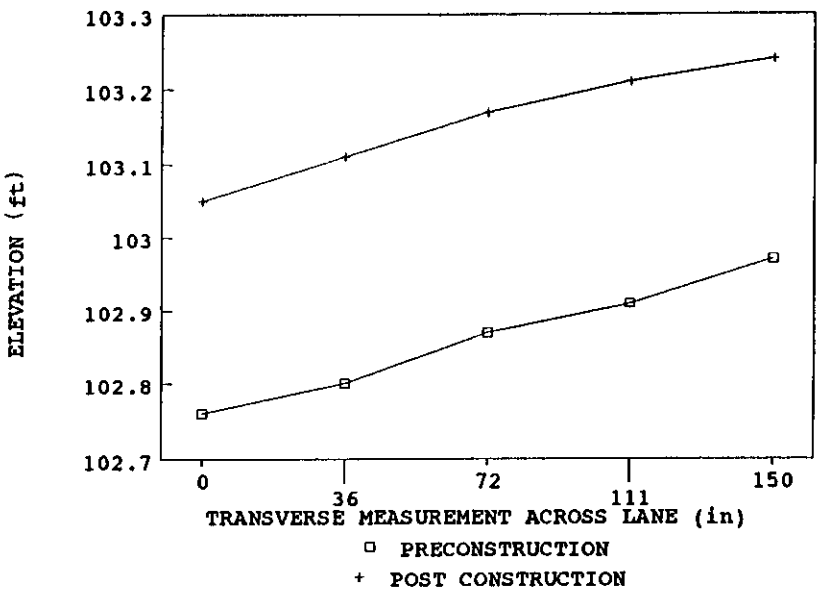
SECTION 300508

STATION 3 + 00



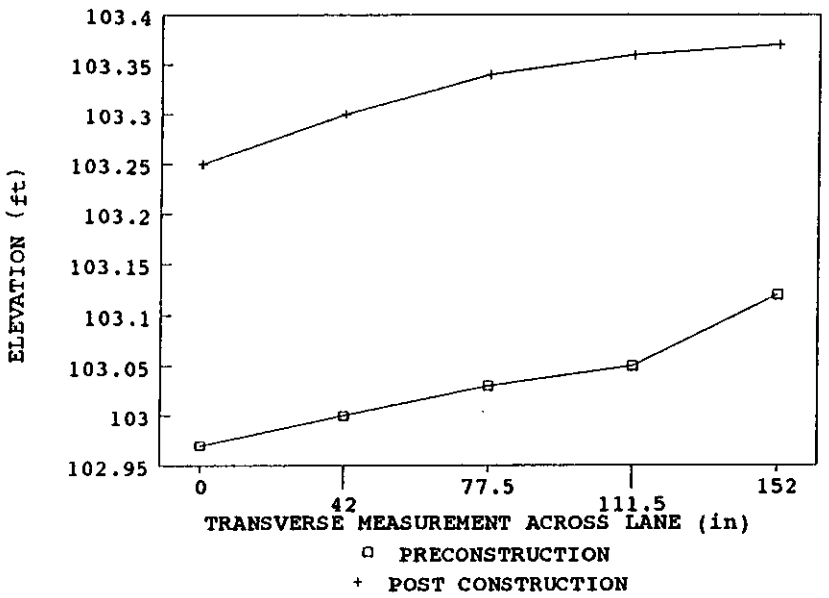
SECTION 300508

STATION 3 + 50



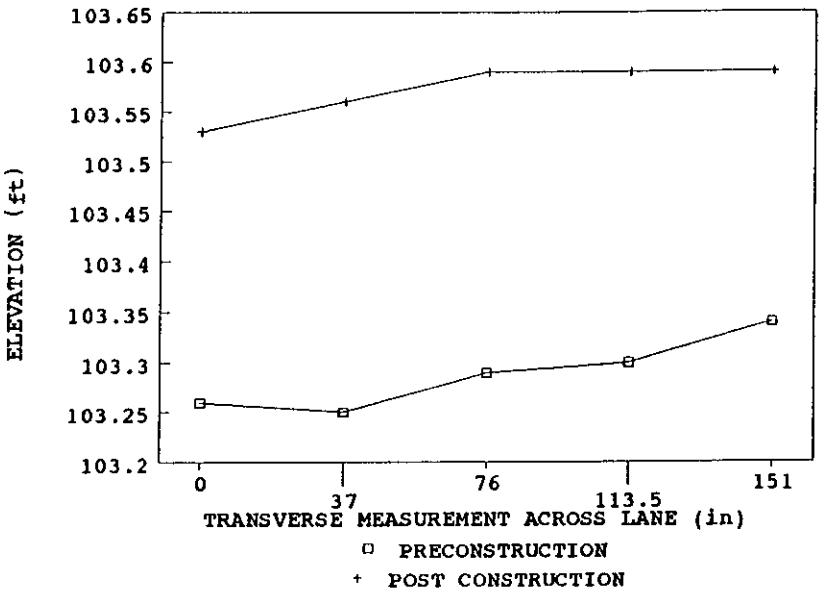
SECTION 300508

STATION 4 + 00



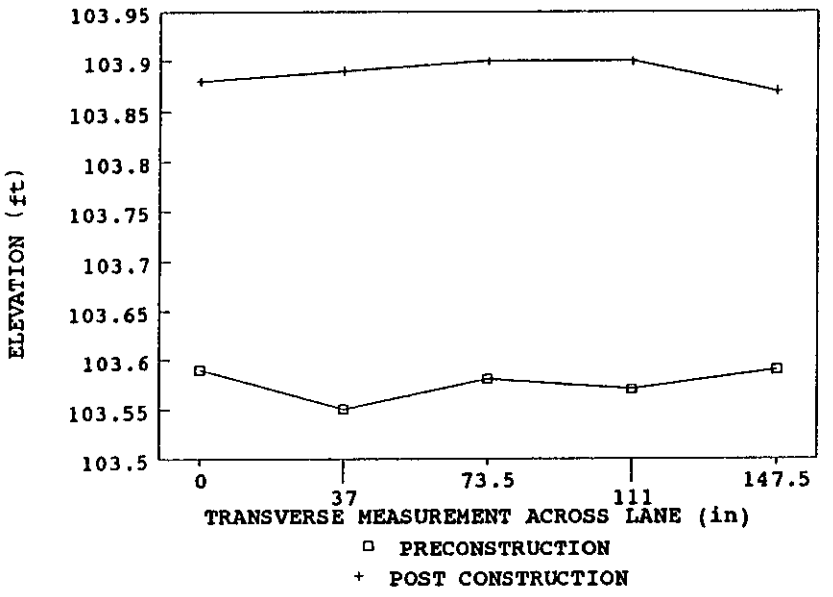
SECTION 300508

STATION 4 + 50



SECTION 300508

STATION 5 + 00

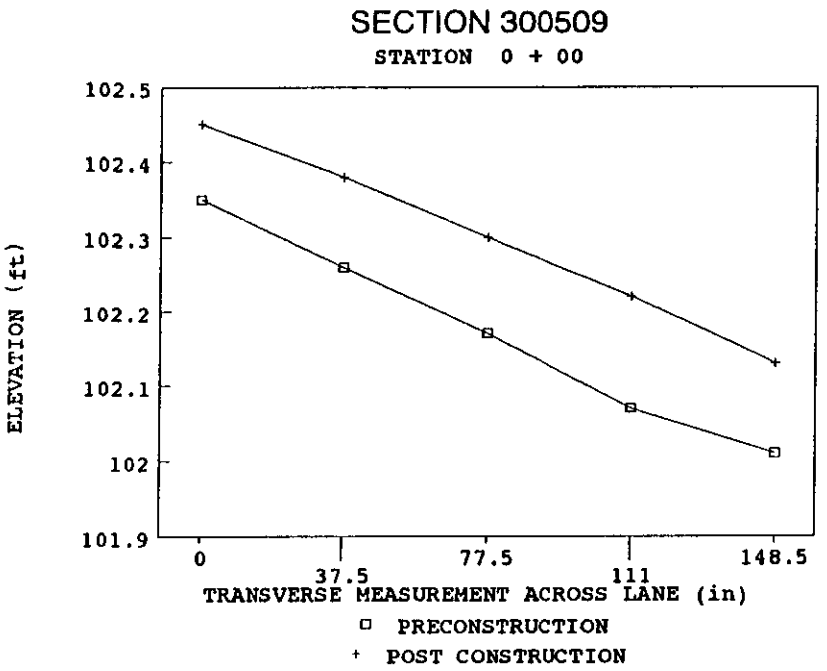


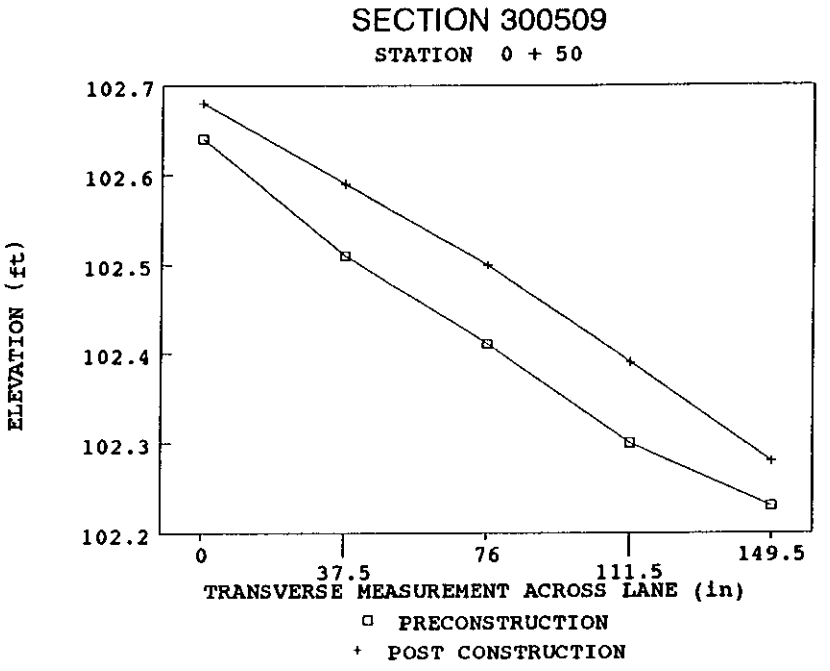
8.54 = HI PRECON
8.16 = HI POSTCON

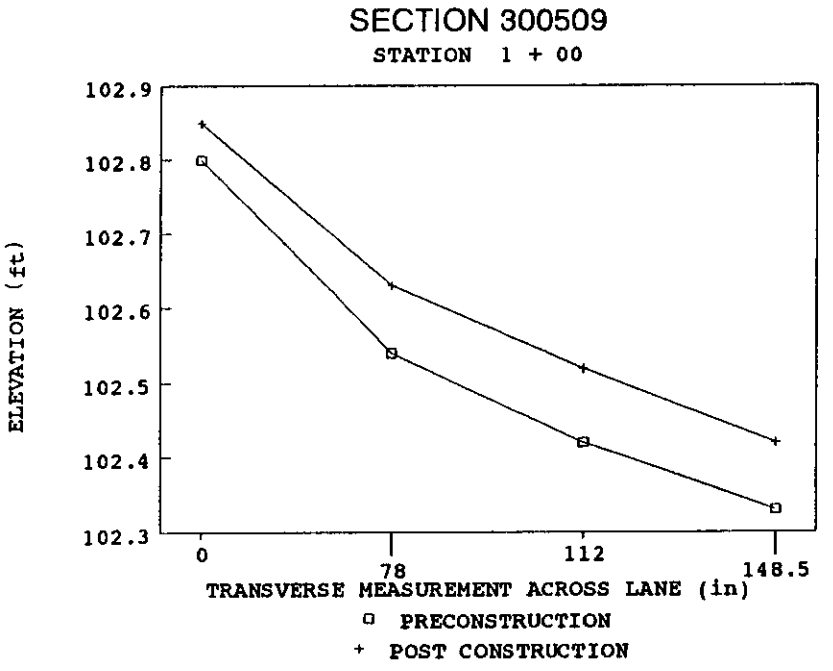
ASSUMED ELEVATION OF 100.00 FT

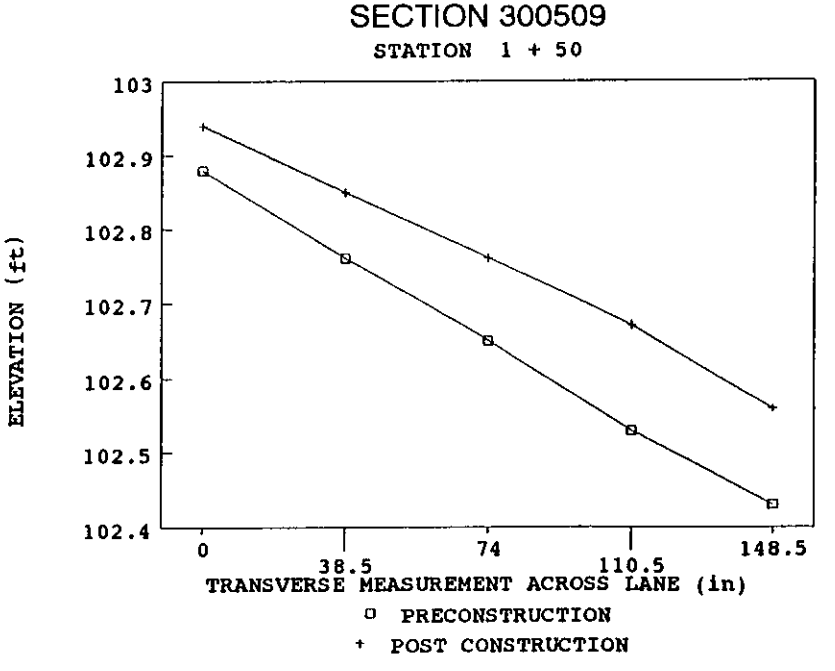
SPS-5 ROD AND LEVEL CALC. BIG TIMBER, MONTANA
SECTION 300509 INTENSIVE PREPARATION 2 INCH RECYCLE

STATION	LANE TO EDGE		ELEVATION	DIFF THICK	OUTER WHEEL PATH		ELEVATION	DIFF THICK	CENTER LINE		ELEVATION	DIFF THICK	IN WHEEL PATH		ELEVATION	DIFF THICK	LANE TO LANE		ELEVATION	DIFF THICK
	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)
0+00	0.00				37.50				77.50				111.00				148.50			
PRECON		6.19	102.35	1.20		6.28	102.26	1.44		6.37	102.17	1.56		6.47	102.07	1.80		6.53	102.01	1.44
POSTCON		5.71	102.43			5.76	102.38			5.86	102.30			5.94	102.22			6.03	102.13	
0+50	0.00				37.50				76.00				111.50				149.50			
PRECON		5.90	102.64	0.48		6.03	102.51	0.96		6.13	102.41	1.08		6.24	102.30	1.08		6.31	102.23	0.80
POSTCON		5.48	102.68			5.57	102.59			5.66	102.50			5.77	102.39			5.98	102.28	
1+00	0.00				36.00				76.00				112.00				148.50			
PRECON		5.74	102.80	0.80		5.76	102.78	-0.24		6.00	102.54	1.08		6.12	102.42	1.20		6.21	102.33	1.08
POSTCON		5.31	102.85			5.40	102.76			5.53	102.63			5.64	102.52			5.74	102.42	
1+50	0.00				36.50				74.00				110.50				149.50			
PRECON		5.66	102.88	0.72		5.78	102.76	1.08		5.89	102.65	1.32		6.01	102.53	1.68		6.11	102.43	1.56
POSTCON		5.22	102.94			5.31	102.85			5.40	102.76			5.49	102.67			5.60	102.56	
2+00	0.00				36.00				77.50				111.50				151.50			
PRECON		5.51	103.03	1.20		5.63	102.91	0.84		5.76	102.78	1.08		5.88	102.66	1.32		5.99	102.56	0.96
POSTCON		5.09	103.07			5.18	102.98			5.29	102.87			5.39	102.77			5.52	102.64	
2+50	0.00				39.00				83.50				110.50				151.00			
PRECON		5.32	103.22	0.72		5.47	103.07	1.20		5.59	102.95	1.20		5.69	102.85	1.32		5.79	102.75	1.08
POSTCON		4.88	103.28			4.99	103.17			5.11	103.05			5.20	102.96			5.32	102.84	
3+00	0.00				45.00				83.50				111.00				149.00			
PRECON		5.18	103.36	0.80		5.35	103.19	1.20		5.45	103.09	1.08		5.56	102.98	1.44		5.84	102.90	0.96
POSTCON		4.75	103.41			4.87	103.29			4.98	103.18			5.08	103.10			5.18	102.98	
3+50	0.00				33.50				74.00				113.50				148.00			
PRECON		5.54	103.00	6.24		5.46	103.08	4.20		5.31	103.23	1.20		5.19	103.35	-1.56		5.08	103.46	-4.20
POSTCON		4.84	103.52			4.73	103.43			4.83	103.33			4.94	103.22			5.05	103.11	
4+00	0.00				35.50				76.00				110.50				149.50			
PRECON		4.96	103.58	0.72		5.08	103.46	1.08		5.19	103.35	1.20		5.32	103.22	1.44		5.42	103.12	1.20
POSTCON		4.52	103.64			4.61	103.55			4.71	103.45			4.82	103.34			4.94	103.22	
4+50	0.00				36.00				80.50				112.50				150.00			
PRECON		4.75	103.79	0.80		4.87	103.67	0.96		4.99	103.55	0.96		5.13	103.41	1.44		5.21	103.33	0.84
POSTCON		4.32	103.84			4.41	103.75			4.53	103.63			4.63	103.53			4.76	103.40	
5+00	0.00				38.00				75.00				111.50				150.00			
PRECON		4.56	103.96	0.48		4.71	103.83	0.96		4.84	103.70	1.20		4.96	103.58	1.32		5.07	103.47	1.08
POSTCON		4.16	104.00			4.25	103.91			4.36	103.80			4.47	103.69			4.60	103.56	


SECTION 300509
STATION 0 + 00
ELEVATION (ft)
102.5
102.4
102.3
102.2
102.1
102
101.9
0
37.5
77.5
111
148.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

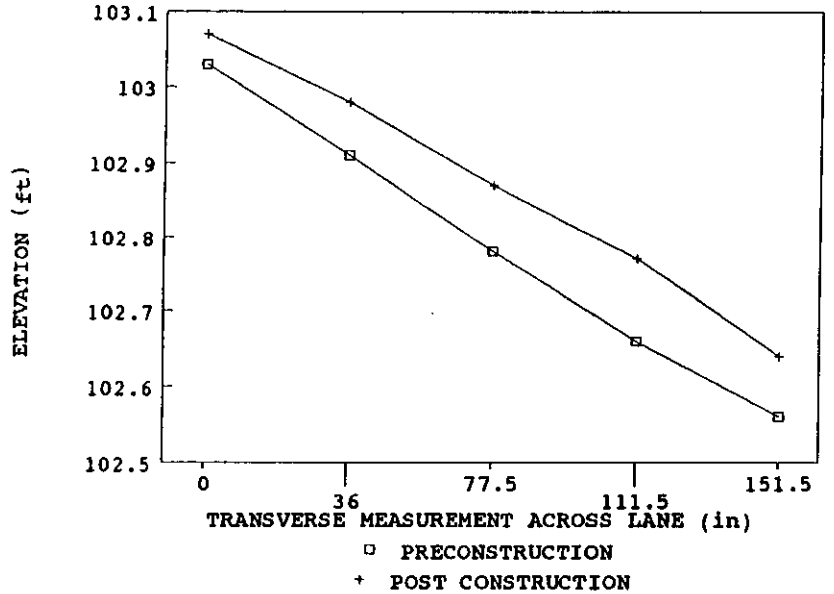

SECTION 300509
STATION 0 + 50
ELEVATION (ft)
102.7
102.6
102.5
102.4
102.3
102.2
0
37.5
76
111.5
149.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300509
STATION 1 + 00
ELEVATION (ft)
102.9
102.8
102.7
102.6
102.5
102.4
102.3
0
78
112
148.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300509
STATION 1 + 50
ELEVATION (ft)
103
102.9
102.8
102.7
102.6
102.5
102.4
0
38.5
74
110.5
148.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

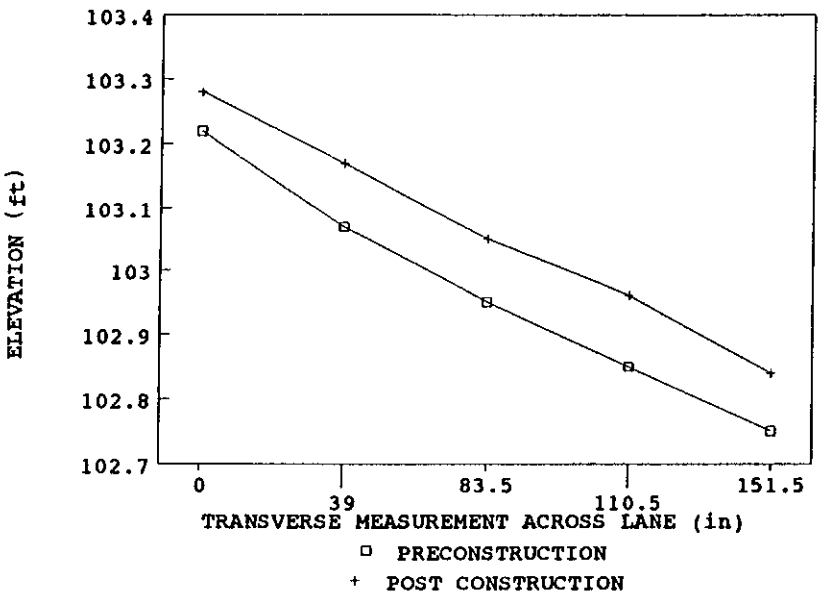
SECTION 300509

STATION 2 + 00



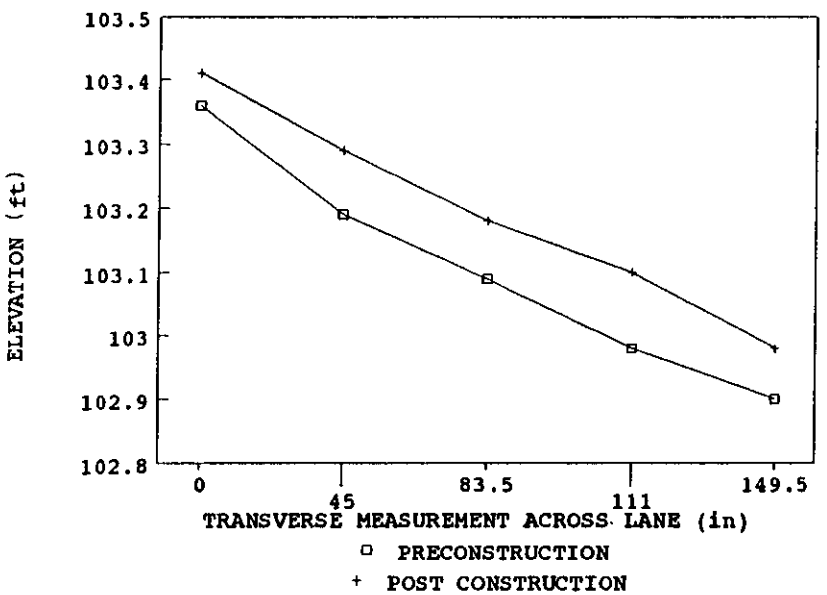
SECTION 300509

STATION 2 + 50



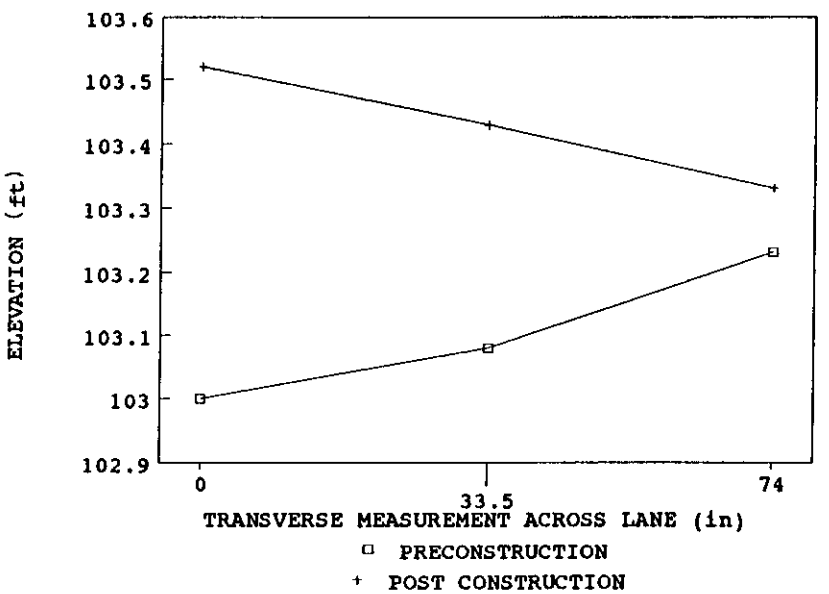
SECTION 300509

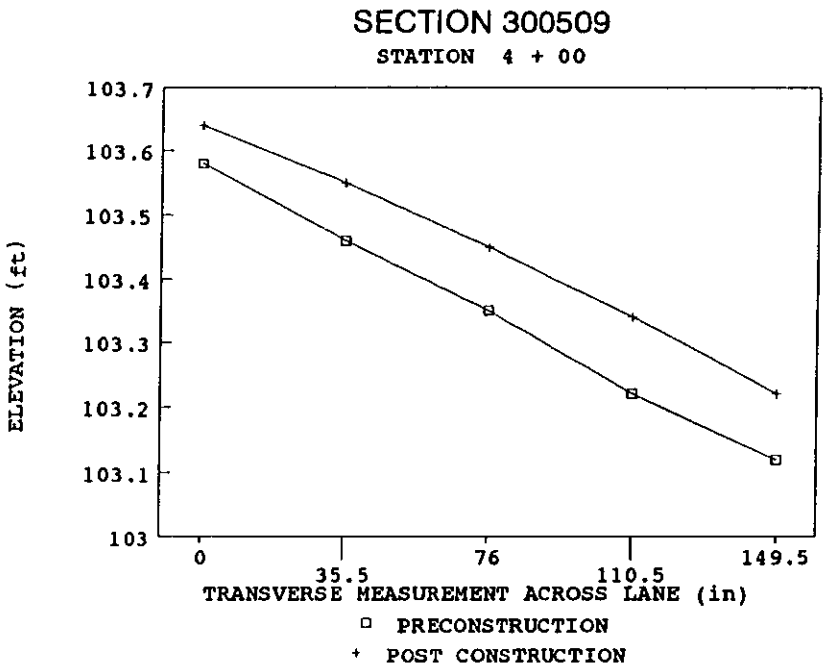
STATION 3 + 00

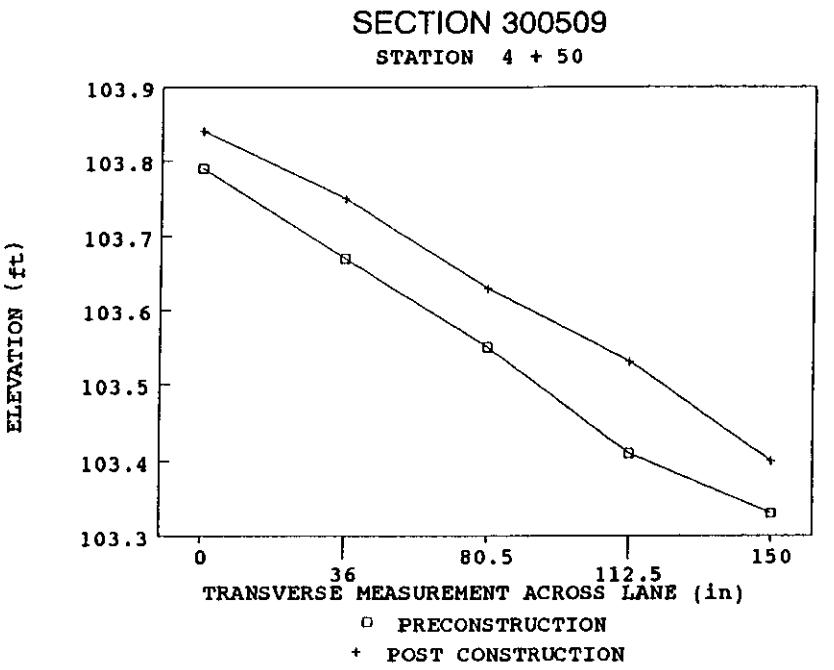


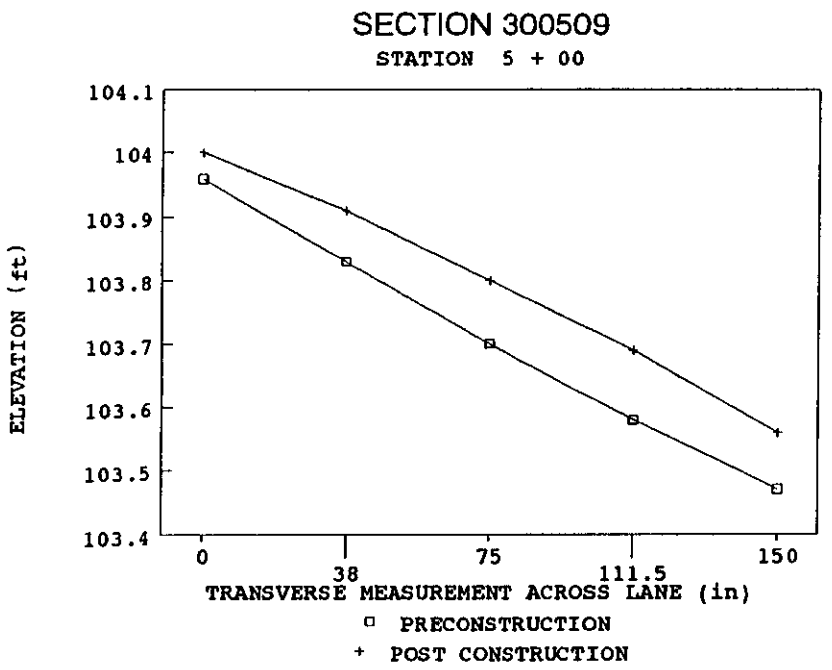
SECTION 300509

STATION 3 + 50




SECTION 300509
STATION 4 + 00
ELEVATION (ft)
103.7
103.6
103.5
103.4
103.3
103.2
103.1
103
0
35.5
76
110.5
149.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300509
STATION 4 + 50
ELEVATION (ft)
103.9
103.8
103.7
103.6
103.5
103.4
103.3
0
36
80.5
112.5
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300509
STATION 5 + 00
ELEVATION (ft)
104.1
104
103.9
103.8
103.7
103.6
103.5
103.4
0
38
75
111.5
150
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION

8.35 = HI PRECON
8.77 = HI POSTCON

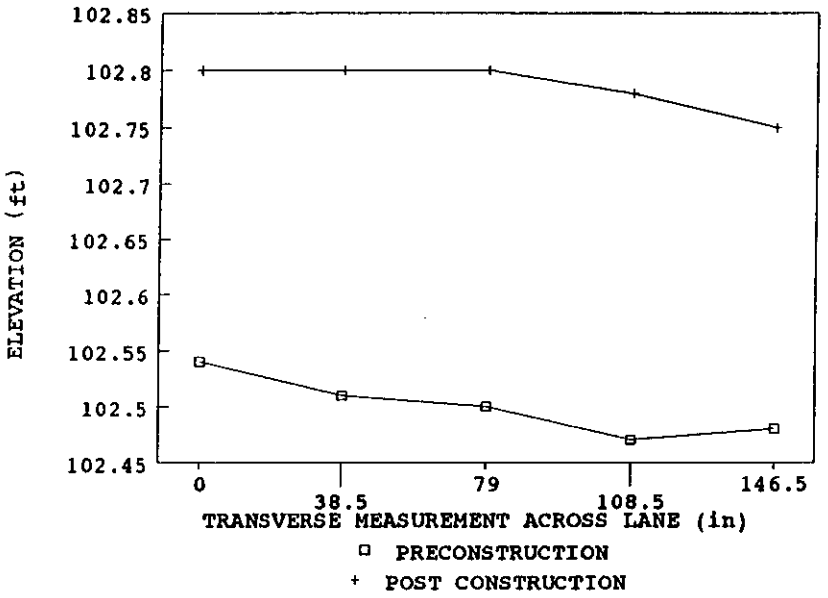
ASSUME D ELEVATION OF 100.00 FT

SPS-5 ROD AND LEVEL CALC. BIG TIMBER, MONTANA
SECTION 300510 MINIMUM PREPARATION 5 INCH POLYBUILT

STATION	LANE TO EDGE		ELEVATION	DIFF THICK	OUTER WHEEL PATH		ELEVATION	DIFF THICK	CENTER LINE		ELEVATION	DIFF THICK	IN WHEEL PATH		ELEVATION	DIFF THICK	LANE TO LANE		ELEVATION	DIFF THICK
	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)
0+00	0.00				36.50				79.00				108.50				146.50			
PRECON		5.81	102.54	3.12		5.84	102.51	3.48		5.85	102.50	3.60		5.88	102.47	3.72		5.87	102.48	3.24
POSTCON		5.97	102.80			5.97	102.80			5.97	102.80			5.99	102.78			6.02	102.75	
0+50	0.00				37.00				78.50				109.00				149.00			
PRECON		5.66	102.67	3.72		5.69	102.66	4.20		5.66	102.69	4.08		5.68	102.67	4.32		5.63	102.72	3.48
POSTCON		5.79	102.98			5.76	103.01			5.74	103.03			5.74	103.03			5.76	103.01	
1+00	0.00				41.00				80.50				108.00				148.00			
PRECON		5.44	102.91	3.60		5.39	102.96	3.84		5.32	103.03	3.60		5.32	103.03	3.96		5.24	103.11	3.36
POSTCON		5.56	103.21			5.49	103.28			5.44	103.33			5.41	103.36			5.38	103.39	
1+50	0.00				39.00				77.00				109.00				151.00			
PRECON		5.10	103.25	3.48		5.05	103.30	4.08		4.96	103.39	4.08		4.93	103.42	4.44		4.82	103.53	3.60
POSTCON		5.23	103.54			5.13	103.64			5.04	103.73			4.98	103.79			4.94	103.83	
2+00	0.00				40.00				76.50				109.00				150.50			
PRECON		4.69	103.66	3.12		4.64	103.71	3.96		4.55	103.80	3.94		4.52	103.83	4.20		4.42	103.93	3.60
POSTCON		4.83	103.94			4.73	104.04			4.65	104.12			4.59	104.18			4.54	104.23	
2+50	0.00				34.50				70.50				109.00				149.00			
PRECON		4.27	104.08	3.36		4.22	104.13	3.84		4.14	104.21	3.72		4.09	104.26	3.96		3.99	104.36	3.48
POSTCON		4.41	104.36			4.32	104.45			4.25	104.52			4.19	104.59			4.12	104.65	
3+00	0.00				37.50				75.50				109.00				147.00			
PRECON		3.89	104.46	3.36		3.84	104.51	3.96		3.85	104.70	2.64		3.71	104.64	4.08		3.61	104.74	3.60
POSTCON		4.03	104.74			3.93	104.84			3.85	104.92			3.79	104.98			3.73	105.04	
3+50	0.00				37.50				72.50				105.00				146.00			
PRECON		3.58	104.77	3.36		3.53	104.82	4.08		3.44	104.91	3.96		3.40	104.95	4.20		3.30	105.05	3.72
POSTCON		3.72	105.05			3.61	105.16			3.53	105.24			3.47	105.30			3.41	105.36	
4+00	0.00				34.00				74.00				108.00				145.50			
PRECON		3.25	105.19	3.48		3.19	105.16	3.72		3.10	105.25	3.72		3.05	105.30	3.72		2.98	105.39	3.36
POSTCON		3.38	105.39			3.30	105.47			3.21	105.56			3.16	105.61			3.10	105.67	
4+50	0.00				33.00				71.50				109.00				145.00			
PRECON		2.89	105.46	3.12		2.85	105.50	3.84		2.75	105.60	3.84		2.69	105.66	3.96		2.59	105.76	3.36
POSTCON		3.05	105.72			2.95	105.82			2.85	105.92			2.78	105.99			2.73	106.04	
5+00	0.00				35.50				75.00				108.00				147.00			
PRECON		2.52	105.83	3.12		2.48	105.86	4.08		2.38	105.97	3.84		2.33	106.02	3.96		2.23	106.12	3.60
POSTCON		2.66	106.09			2.57	106.20			2.48	106.29			2.42	106.35			2.35	106.42	

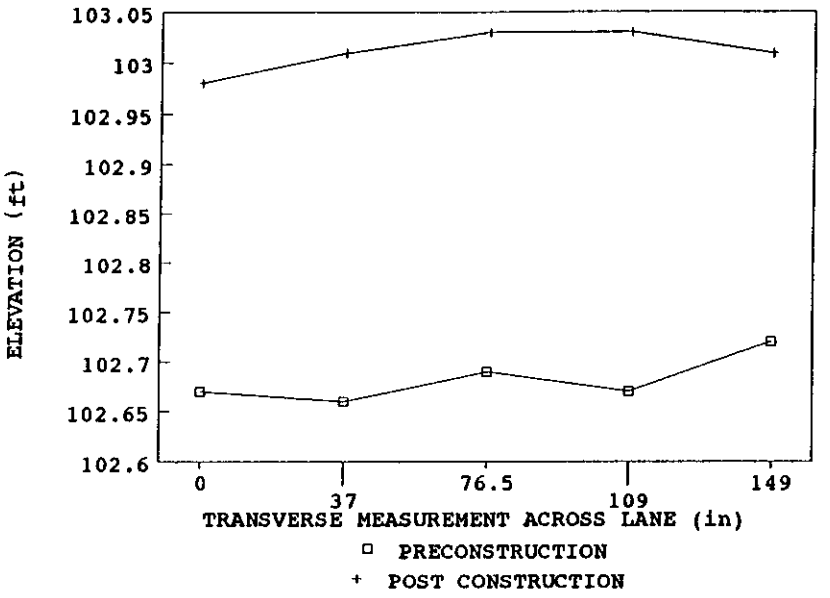
SECTION 300510

STATION 0 + 00



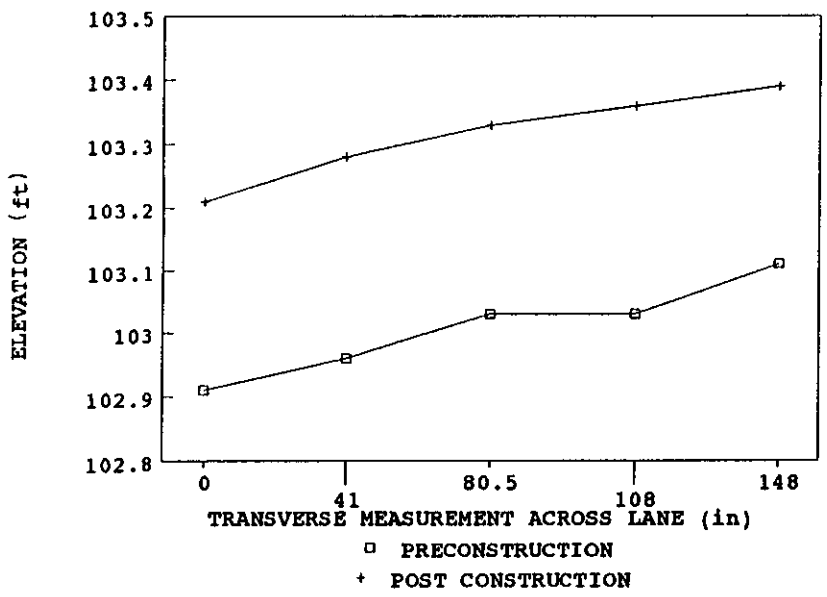
SECTION 300510

STATION 0 + 50



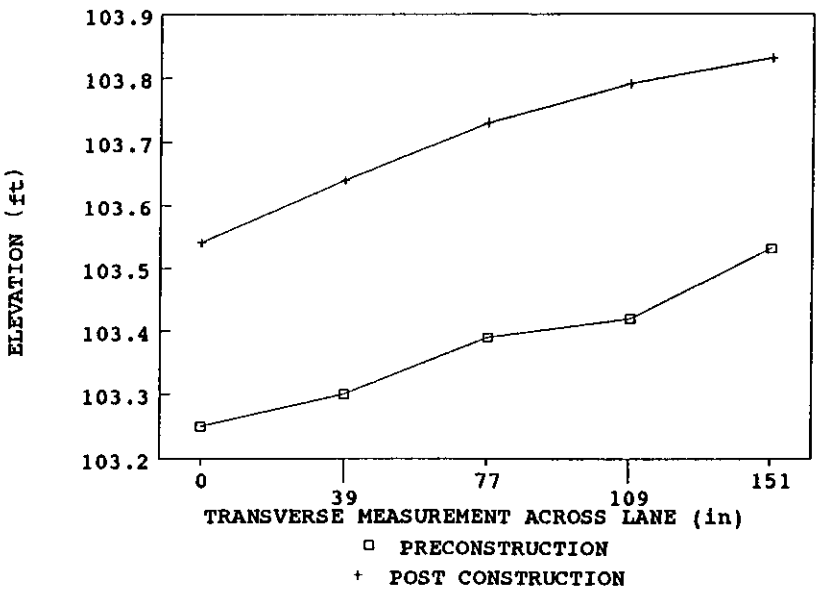
SECTION 300510

STATION 1 + 00



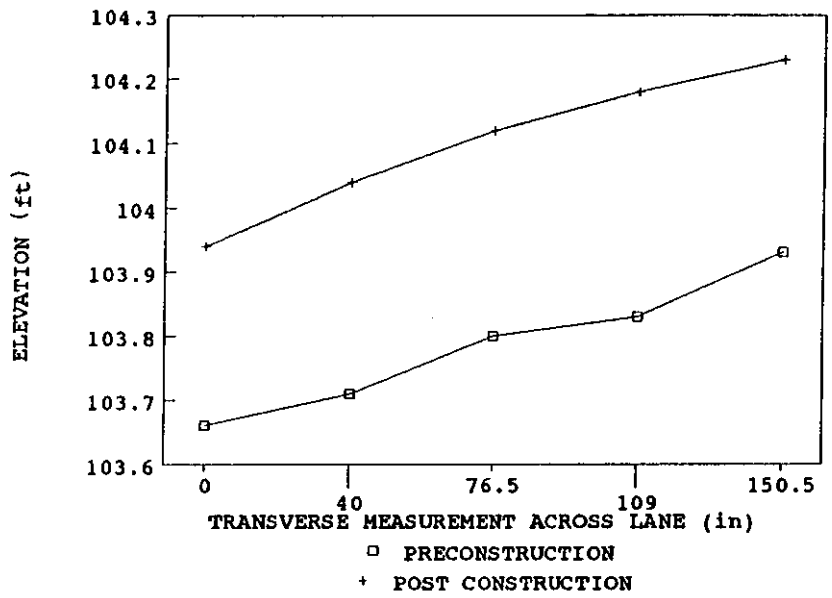
SECTION 300510

STATION 1 + 50



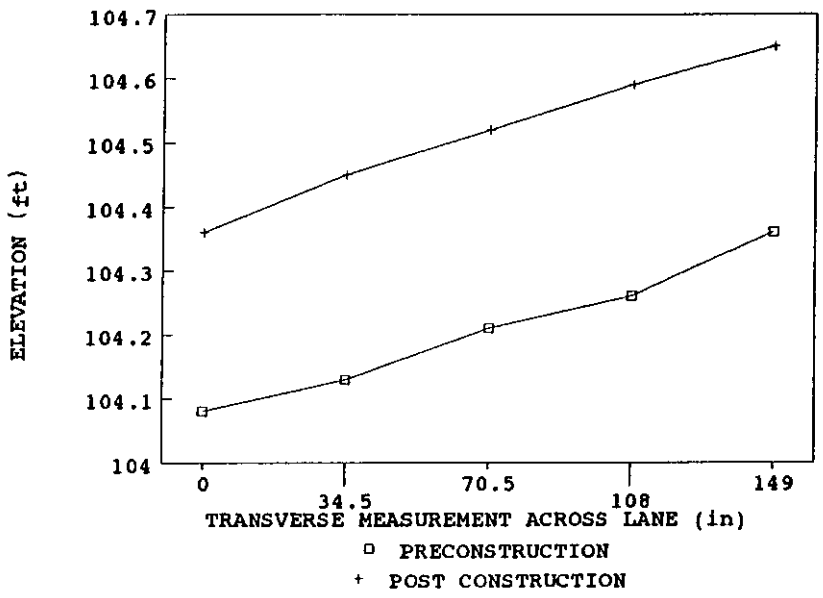
SECTION 300510

STATION 2 + 00



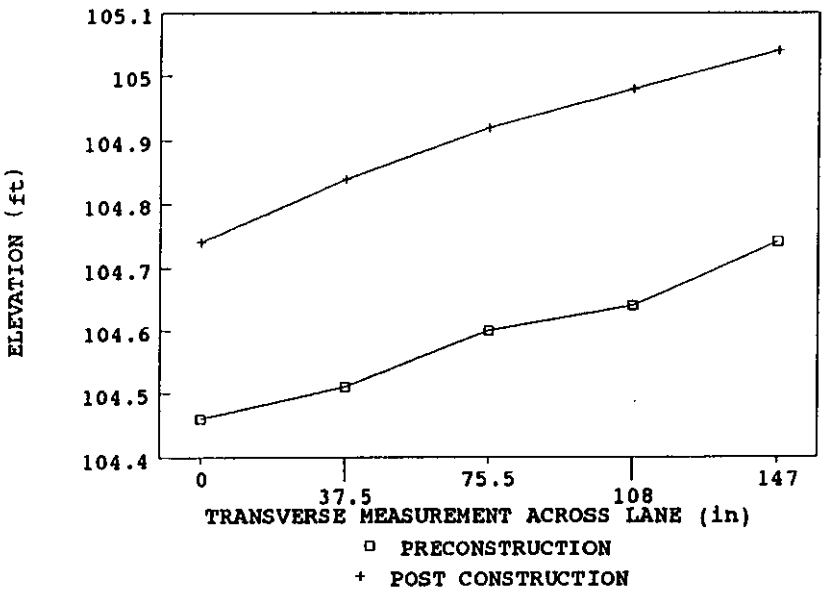
SECTION 300510

STATION 2 + 50



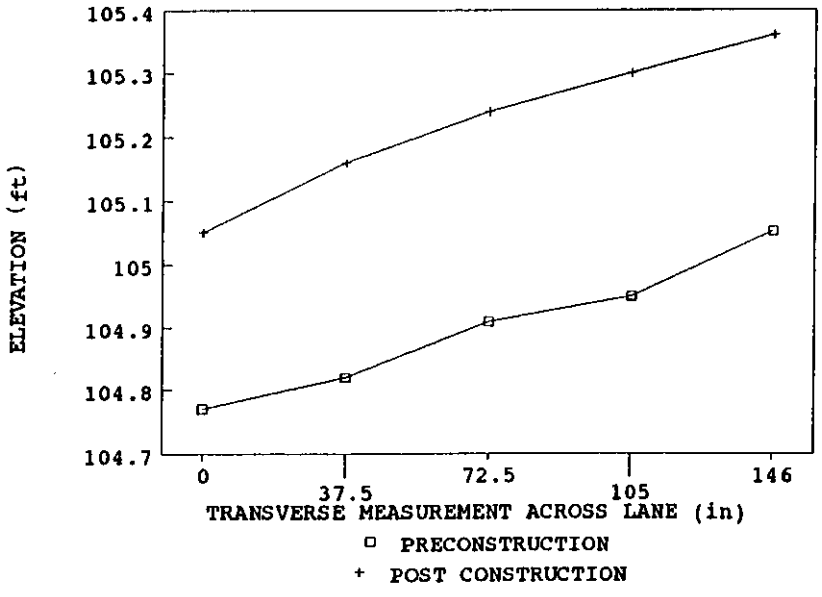
SECTION 300510

STATION 3 + 00



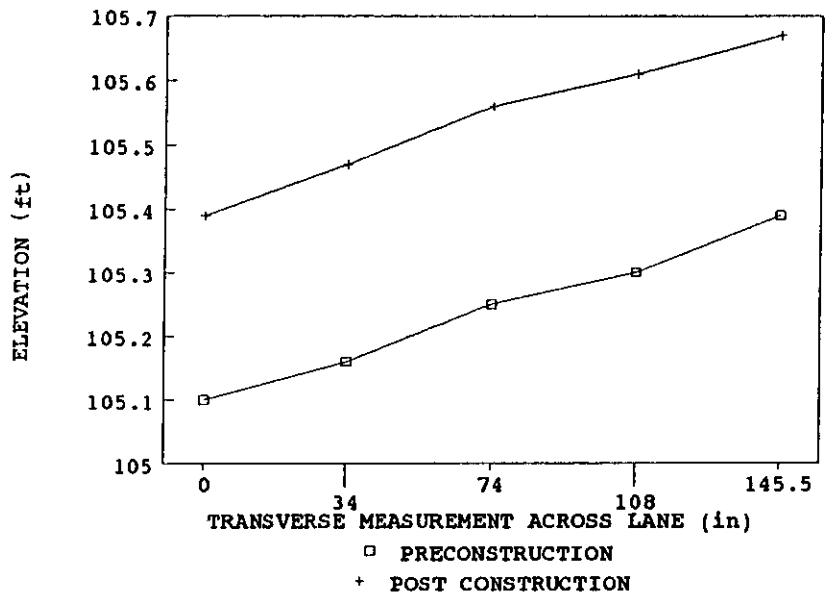
SECTION 300510

STATION 3 + 50



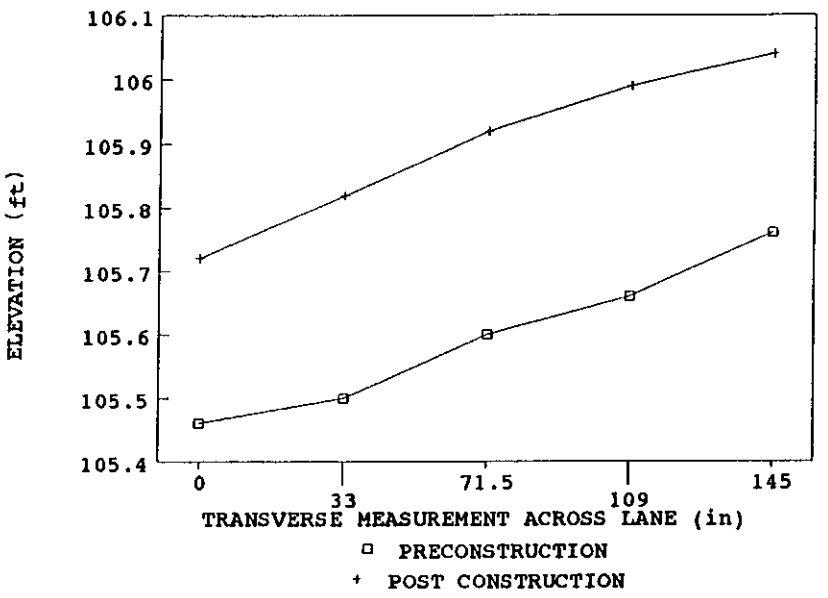
SECTION 300510

STATION 4 + 00



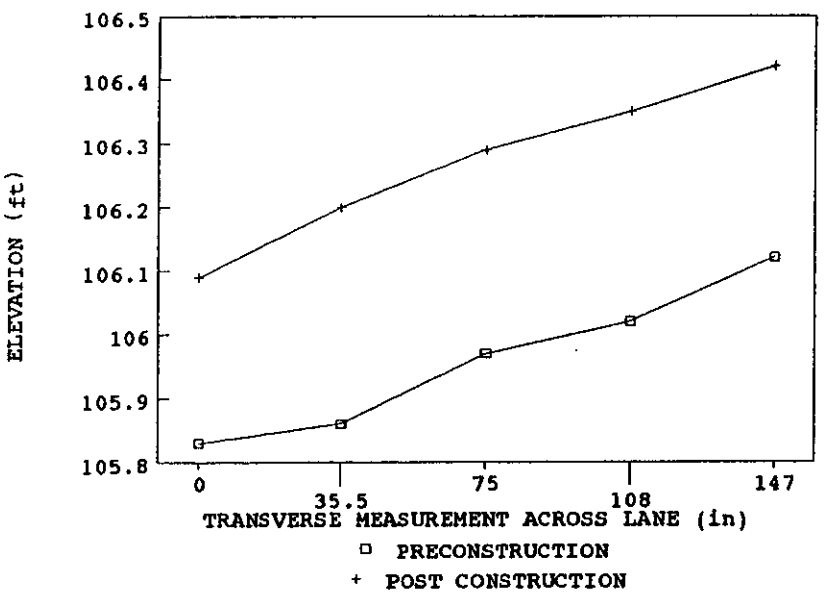
SECTION 300510

STATION 4 + 50



SECTION 300510

STATION 5 + 00



8.02 = HI PRECON
7.89 = HI POSTCON

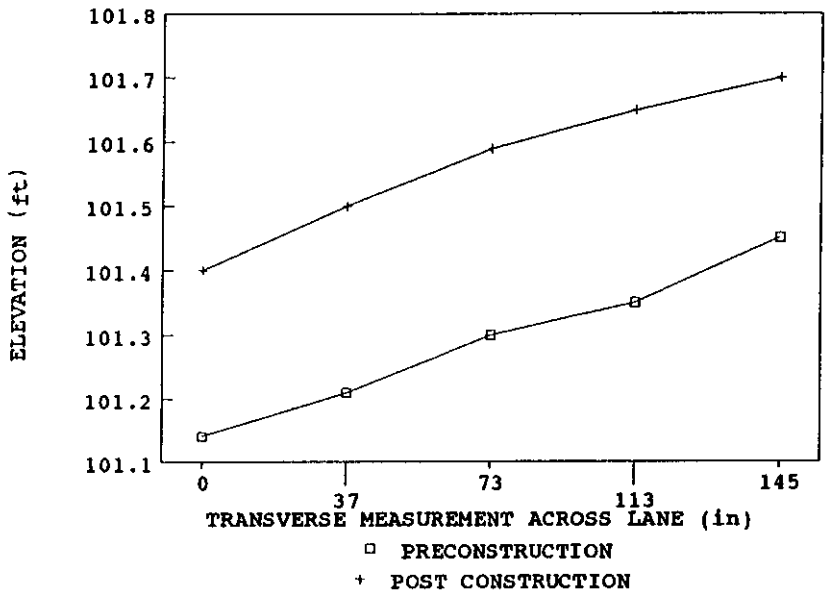
ASSUMED ELEVATION OF 100.00 FT

SPS-5 ROD AND LEVEL CALC. BIG TIMBER, MONTANA
SECTION 300511 MINIMUM PREPARATION 5 INCH KRATON

STATION	LANE TO EDGE		ELEVATION	DIFF THICK	OUTER WHEEL PATH		ELEVATION	DIFF THICK	CENTER LINE		ELEVATION	DIFF THICK	IN WHEEL PATH		ELEVATION	DIFF THICK	LANE TO LANE		ELEVATION	DIFF THICK
	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)	(in)	R&L	(ft)	(inches)
0+00	0.00				37.00				73.00				113.00				145.00			
PRECON		6.86	101.14	3.12		6.81	101.21	3.48		6.72	101.30	3.48		6.67	101.35	3.60		6.57	101.45	3.00
POSTCON		6.43	101.40			6.33	101.50			6.24	101.59			6.18	101.65			6.13	101.70	
0+50	0.00				32.00				72.50				110.50				145.00			
PRECON		6.51	101.51	3.24		6.46	101.54	3.84		6.37	101.65	3.72		6.30	101.72	3.72		6.20	101.82	3.24
POSTCON		6.05	101.79			5.97	101.88			5.87	101.96			5.80	102.03			5.74	102.09	
1+00	0.00				30.00				69.50				108.00				142.00			
PRECON		6.00	101.99	3.36		5.98	102.04	3.72		5.87	102.15	3.36		5.82	102.20	3.72		5.73	102.29	3.36
POSTCON		5.56	102.27			5.48	102.35			5.40	102.43			5.32	102.51			5.26	102.57	
1+50	0.00				27.00				71.50				109.50				146.00			
PRECON		5.47	102.55	2.88		5.50	102.52	4.08		5.34	102.68	3.36		5.28	102.74	3.48		5.20	102.82	3.12
POSTCON		5.04	102.79			4.97	102.86			4.87	102.96			4.80	103.03			4.75	103.08	
2+00	0.00				30.50				73.50				109.00				142.50			
PRECON		4.98	103.04	3.12		4.96	103.06	3.84		4.84	103.18	3.60		4.80	103.22	3.96		4.72	103.30	3.72
POSTCON		4.54	103.29			4.45	103.38			4.35	103.48			4.28	103.55			4.22	103.61	
2+50	0.00				34.00				75.00				106.00				144.50			
PRECON		4.51	103.51	3.12		4.50	103.52	4.08		4.39	103.64	3.72		4.35	103.67	4.20		4.25	103.77	3.72
POSTCON		4.06	103.77			3.97	103.86			3.88	103.95			3.81	104.02			3.75	104.08	
3+00	0.00				29.00				74.00				108.50				141.00			
PRECON		4.03	103.99	3.00		4.01	104.01	3.84		3.90	104.12	3.72		3.87	104.15	4.20		3.79	104.23	3.96
POSTCON		3.59	104.24			3.50	104.33			3.40	104.43			3.33	104.50			3.27	104.56	
3+50	0.00				32.50				76.00				108.50				146.50			
PRECON		3.56	104.46	3.12		3.53	104.49	3.96		3.43	104.59	3.84		3.39	104.63	4.20		3.29	104.73	3.72
POSTCON		3.11	104.72			3.01	104.82			2.92	104.91			2.85	104.98			2.79	105.04	
4+00	0.00				39.00				80.00				109.00				145.50			
PRECON		3.06	104.96	3.24		3.03	104.99	4.08		2.93	105.09	4.08		2.89	105.13	4.20		2.81	105.21	3.96
POSTCON		2.60	105.23			2.50	105.33			2.40	105.43			2.35	105.48			2.29	105.54	
4+50	0.00				35.50				75.00				109.00				144.00			
PRECON		2.53	105.49	3.36		2.49	105.53	3.96		2.40	105.62	3.96		2.37	105.65	4.32		2.28	105.74	3.84
POSTCON		2.06	105.77			1.97	105.86			1.89	105.95			1.82	106.01			1.77	106.06	
5+00	0.00				34.50				74.50				109.00				143.50			
PRECON		2.04	105.98	3.84		2.01	106.01	4.32		1.92	106.10	4.20		1.87	106.15	4.20		1.79	106.23	3.84
POSTCON		1.53	106.50			1.46	106.57			1.38	106.65			1.33	106.70			1.28	106.75	

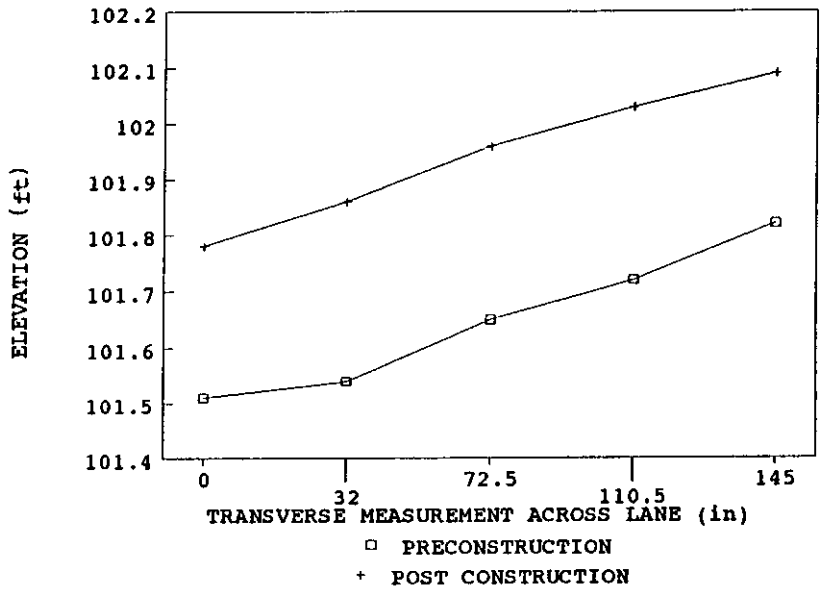
SECTION 300511

STATION 0 + 00



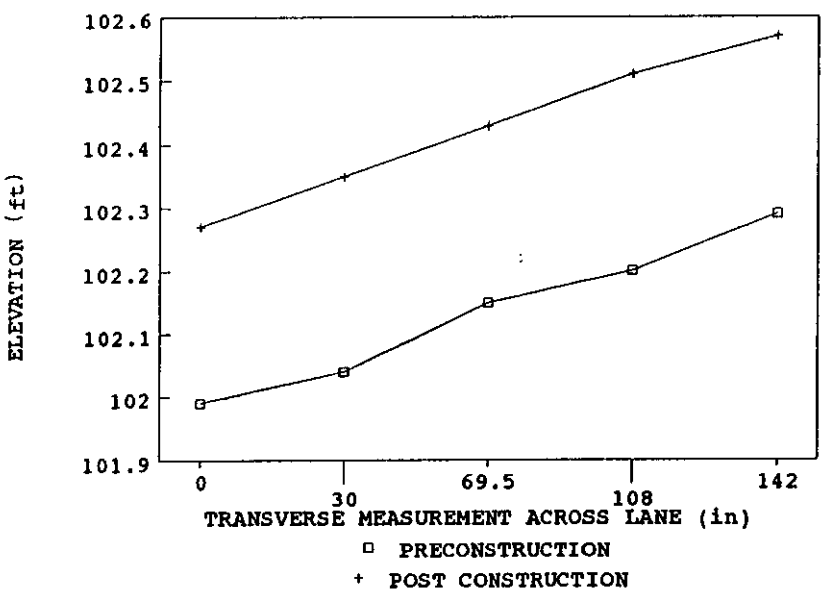
SECTION 300511

STATION 0 + 50



SECTION 300511

STATION 1 + 00



SECTION 300511

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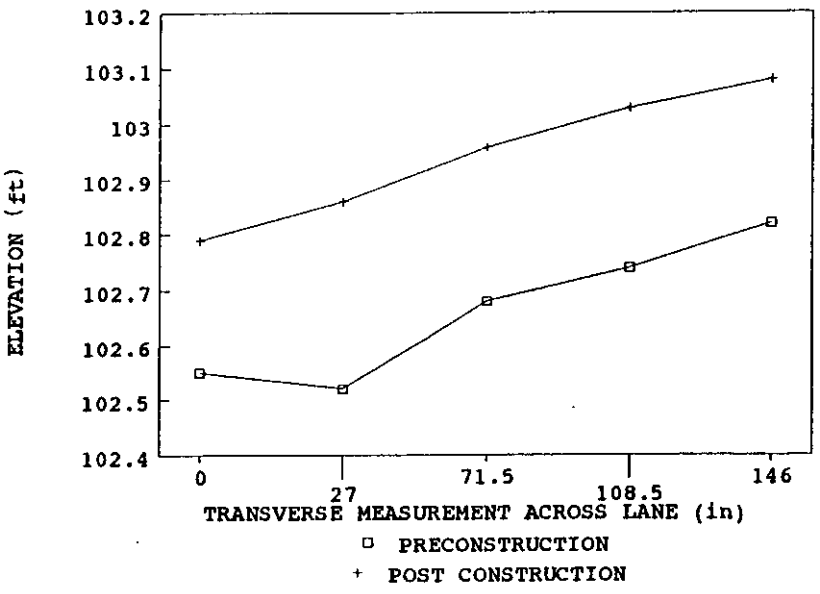
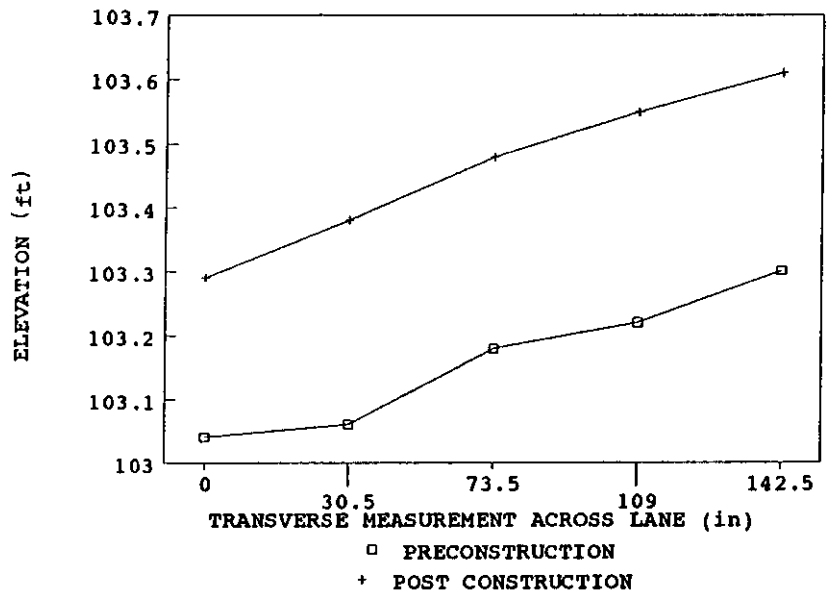


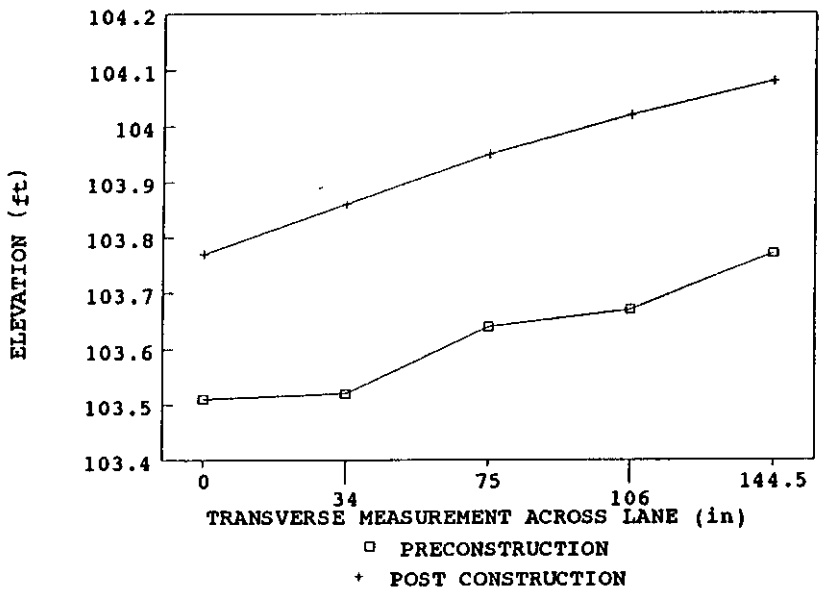
SECTION 300511

STATION 2 + 00



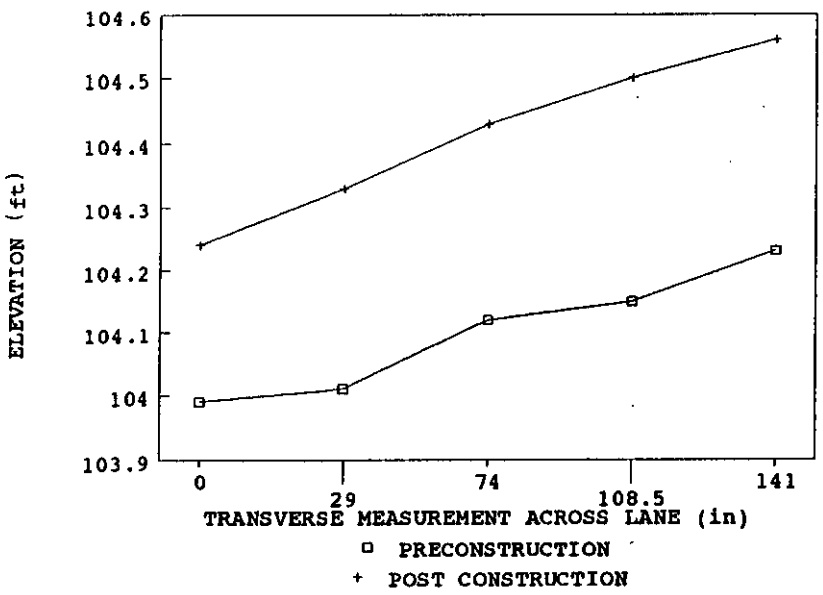
SECTION 300511

STATION 2 + 50



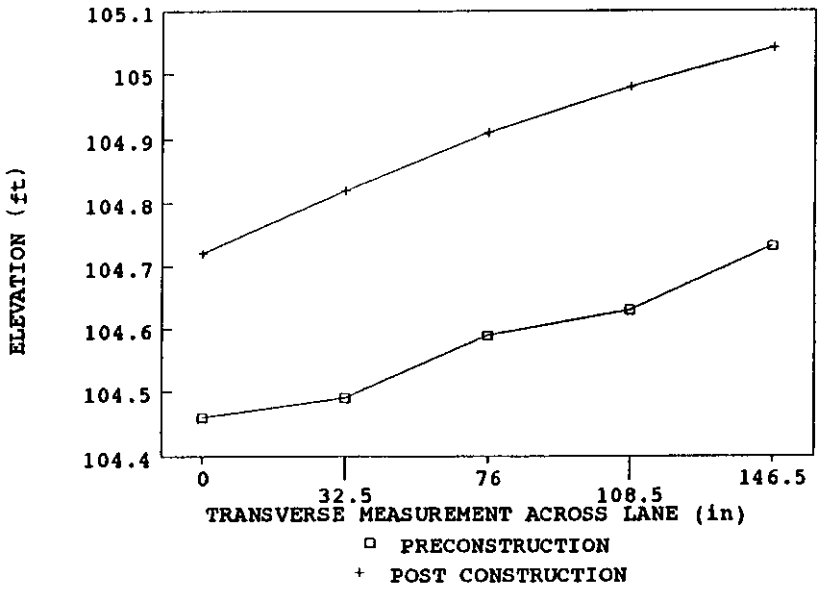
SECTION 300511

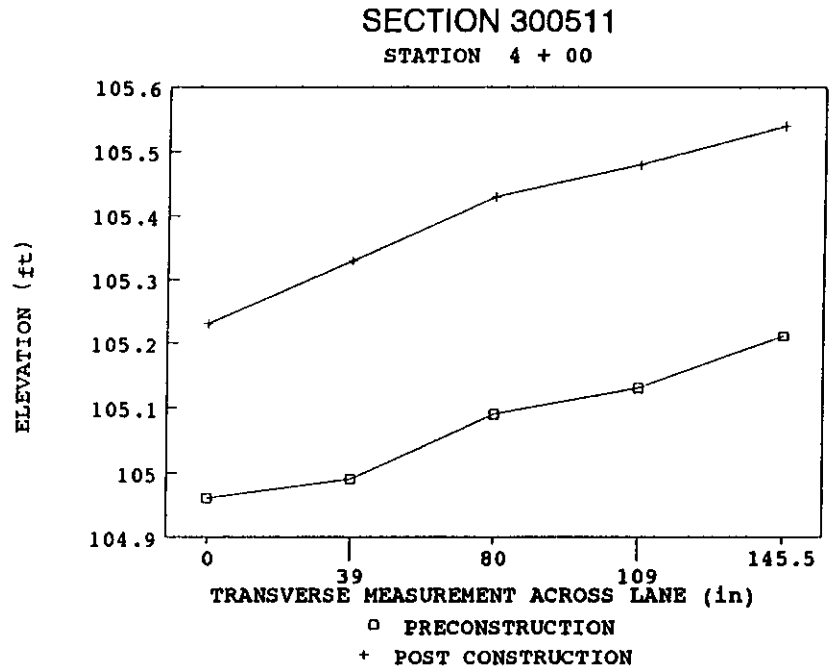
STATION 3 + 00

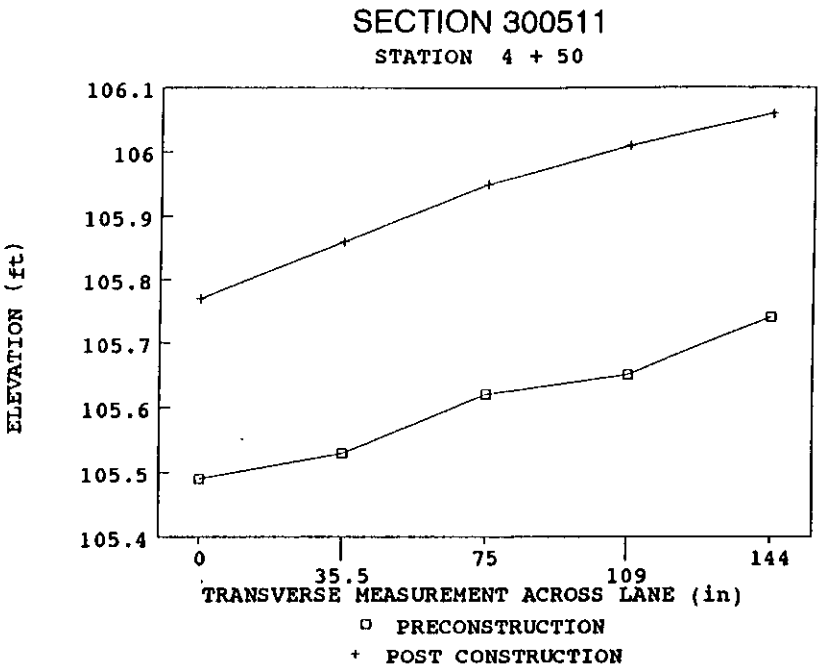


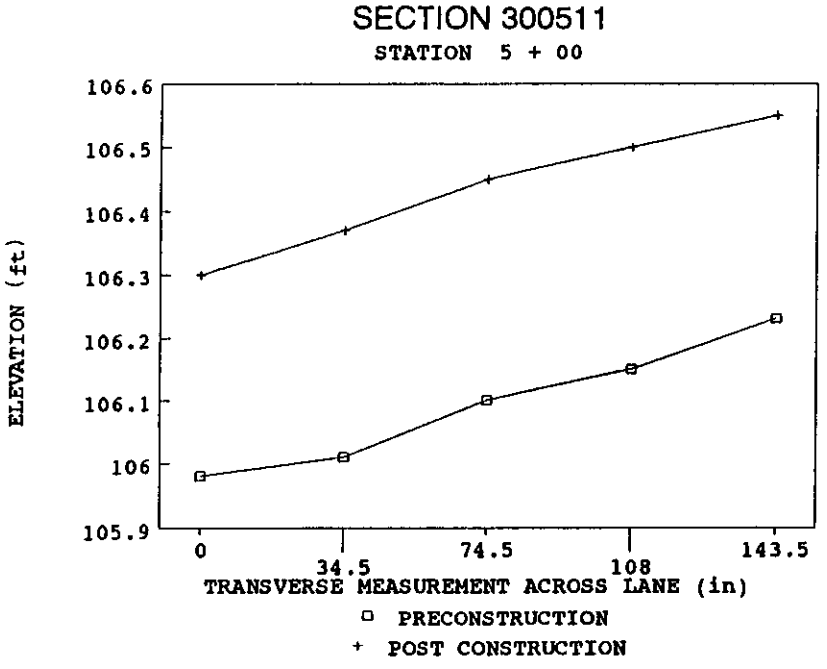
SECTION 300511

STATION 3 + 50




SECTION 300511
STATION 4 + 00
ELEVATION (ft)
105.6
105.5
105.4
105.3
105.2
105.1
105
104.9
0
39
80
109
145.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300511
STATION 4 + 50
ELEVATION (ft)
106.1
106
105.9
105.8
105.7
105.6
105.5
105.4
0
35.5
75
109
144
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION


SECTION 300511
STATION 5 + 00
ELEVATION (ft)
106.6
106.5
106.4
106.3
106.2
106.1
106
105.9
0
34.5
74.5
108
143.5
TRANSVERSE MEASUREMENT ACROSS LANE (in)
PRECONSTRUCTION
POST CONSTRUCTION